DORLING KINDERSLEY
HANDBOOKS

REPTILES AND AMPHIBIANS

Mark O'Shea & Tim Halliday



Tomato Frog



Emerald Tree Boa



Oustalet's Chameleon



Yellow-margined Box Turtle



Fire Salamander



Standing's Day Gecko



Cornsnake



Dwarf Crocodile

The clearest recognition guides available

DORLING KINDERSLEY HANDBOOKS

REPTILES AND AMPHIBIANS

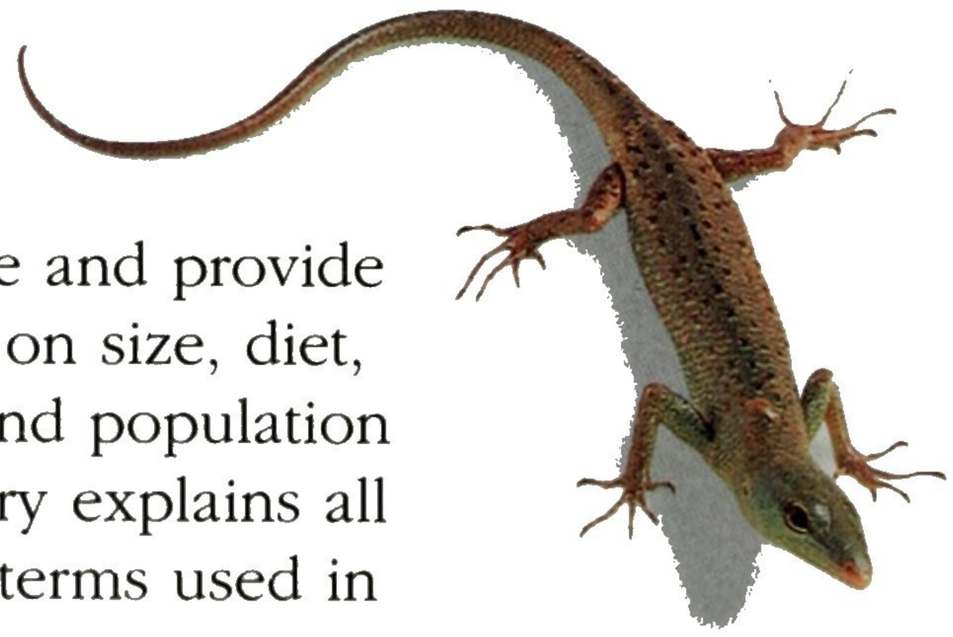
A systematic approach, authoritative text, and clear photographs make the *Dorling Kindersley Handbook of Reptiles and Amphibians* the most comprehensive and easy-to-use pocket guide to the reptiles and amphibians of the world. Packed with over 600 color photographs of more than 400 species, this handbook is designed to enable you to recognize each species quickly and easily.

IDENTIFICATION MADE EASY

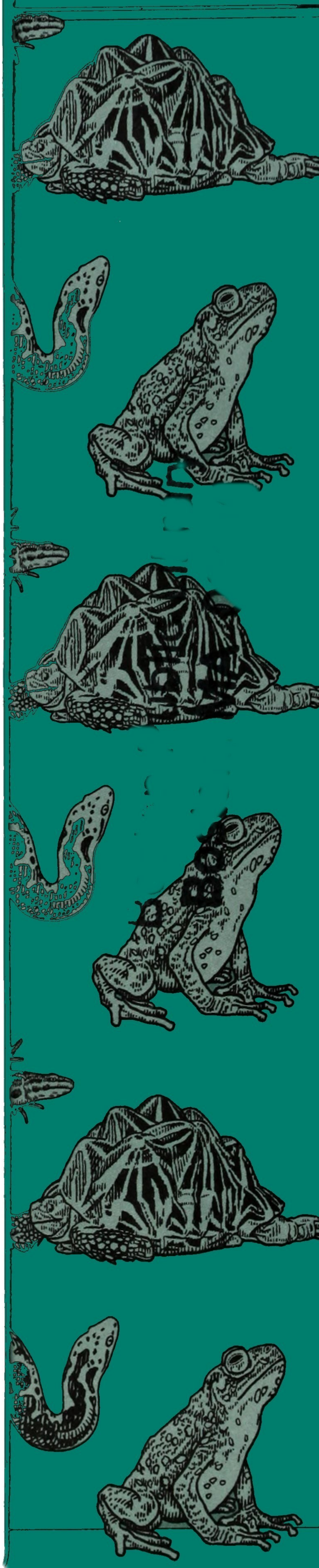
Expertly written, each entry combines a precise description with fully annotated photographs to highlight the chief characteristics and distinguishing features of each species. A comprehensive introduction describes the anatomy, lifecycle, and behavior of the major groups of reptiles and amphibians, while the initial steps of identification are facilitated by a clear visual key.

IN-DEPTH INFORMATION

Each entry in the *Dorling Kindersley Handbook of Reptiles and Amphibians* is accompanied by a map showing the geographical distribution of the species, while the text and color-coded bands give the internationally accepted scientific name and provide at-a-glance information on size, diet, habitat, reproduction, and population status. A concise glossary explains all technical and scientific terms used in the book.



$18.95





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MARK O'SHEA AND TIM HALLIDAY



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(American Museum of Natural History)

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Contents

Introduction • *6*
Authors' Introduction *6*
How This Book Works *9*
What is an Amphibian? *10*
What is a Reptile? *12*
Amphibian Reproduction *16*
Reptile Reproduction *19*
Amphibian Feeding Habits *20*
Reptile Feeding Habits *21*
Movement and Activity *24*
Defense *26*
Distribution and Habitat *28*
Conservation *30*
Studying and Keeping *32*
Identification Key *34*

Reptiles • *44*
Turtles and Tortoises *44*
Tuataras *57*
Lizards *58*
Snakes *104*
Crocodilians *190*

Amphibians • *196*
Newts and Salamanders *196*
Caecilians *209*
Frogs and Toads *211*

Glossary *246*
Index *248*
Acknowledgments *256*







AUTHORS' INTRODUCTION

The study of reptiles and amphibians, called herpetology, encompasses approximately 11,000 living species, ranging from tiny South American poison-dart frogs to huge Indo-Pacific crocodiles. Reptiles and amphibians are among the most successful and diverse animals on Earth, and many have fascinating lifestyles, intriguing adornments, striking colors and camouflage patterns, and deadly toxins. Some are ferocious predators.

AMPHIBIANS first appeared on Earth around 400 million years ago and were the dominant land animals for over 80 million years. However, the large, armored, fishlike predators of the Carboniferous period (350–270 million years ago) were quite unlike modern amphibians, which are smaller and lack the body armor and the tough skeletons of their ancestors. Modern amphibians appeared around 200 million years ago. When the supercontinent Pangaea broke up during the Jurassic period, about 150 million years ago, species were dispersed with the land masses, which is why they have proliferated worldwide despite their inability to tolerate saltwater. Today, the Class Amphibia contains approximately 4,550 species in three orders.



EARLY ANCESTOR
Amphibians are thought to have evolved from lobe-finned fish not unlike the lungfish of today. This fossilized lungfish, which was found in Scotland, is more than 400 million years old.



POISON-DART FROG
Often brilliantly coloured, poison-dart frogs are active by day; this is unusual because the majority of amphibians are active only during the hours of darkness. Some species are highly poisonous.

Although the reptiles date back to the Upper Carboniferous period, most orders (including the marine mosasaurs, the flying pterosaurs, and the terrestrial dinosaurs) died out about 65 million years ago, most likely due to a natural cosmic or climatic disaster. The class Reptilia, as recognized today, is an artificial rather than a natural taxonomic group because it omits birds. Birds are placed in the separate class Aves but are now thought to be the closest living relatives of crocodilians (crocodiles and alligators). The ancestors of the turtles evolved about 200 million years ago, and early crocodilians diverged from lepidosaurians (ancestors of snakes, lizards, and tuataras) about 100 million years ago. The Class Reptilia contains about 6,660 species in four orders.

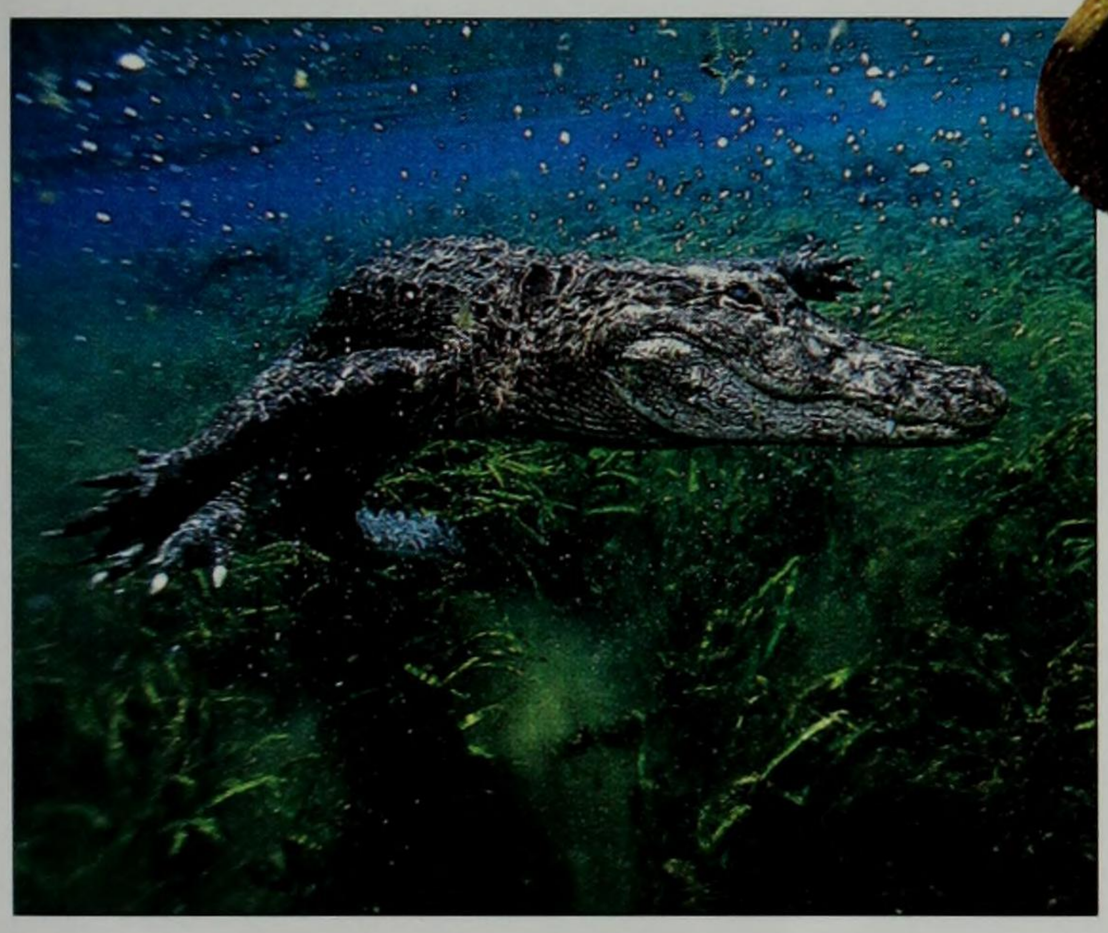
Distinguishing Features

Amphibians and reptiles, along with mammals and birds, are tetrapods – vertebrates with four limbs (although some, such as snakes and caecilians, no longer have any limbs). Amphibians are separated from other tetrapods by the need to return to water to reproduce because their eggs lack a protective shell. Most pass through a larval stage or series of stages. Reptiles, however, do not need water to breed, since their eggs are protected by a toughened shell. Some reptiles have advanced further still, and the young develop inside the body of the female. Reptiles are protected from desiccation by a waterproof skin, whereas amphibians possess a scaleless, water-permeable skin. Amphibians and reptiles are cold-blooded, relying on local conditions to raise their bodies to active temperatures.



Tiger Salamander

Many salamanders superficially resemble lizards. They are, in fact, amphibians and have smooth, scaleless skin. Although the Tiger Salamander is a land-dwelling species, it returns to water to breed. It lays masses of gelatinous eggs that stick to underwater vegetation and develop into aquatic larvae.



◁ Alligator

Some reptiles are adapted for aquatic lifestyles. The American Alligator preys on fish and turtles, but it also takes mammals and birds. It lays eggs on land and protects its young from predators.

▽ Giant Lizard

Weighing up to 310lb (140kg), the Komodo Dragon is the world's largest lizard. It is deceptively agile and will ambush wild pigs, deer, and even humans.



CLASSIFICATION

All lifeforms are classified by biologists into five kingdoms. All animals are placed in the kingdom Animalia, which is subdivided into phyla. The subphylum Vertebrata comprises those animals with a backbone within the phylum Chordata (animals with a spinal chord). Amphibia and Reptilia are two classes within the the Vertebrata. Examples of the main subdivisions are listed below.

Class A taxonomic group comprising orders of animals that share similar characteristics.	REPTILIA	AMPHIBIA
Order Each class is subdivided into orders, which are made up of closely related animal families.	SQUAMATA	ANURA
Family Each order is divided into families, which are made up of closely related genera.	HELODERMATIDAE	MICROHYLIDAE
Genus Each family contains a number of genera; each genus is made up of closely related species.	*Heloderma*	*Dyscophus*
Species A species is the basic unit in taxonomy. It contains those animals that are capable of interbreeding.	*suspectum*	*antongilli*
Subspecies Species may adapt to new isolated environments to form subspecies or varieties.	*cinctum*	



△ TOMATO FROG
Dyscophus antongilli *is an endangered species from Madagascar.*



◁ GILA MONSTER
Heloderma suspectum cinctum *is the ringed subspecies of Gila Monster.*

How This Book Works

This book is first divided into two sections: reptiles and amphibians. It is then further divided into orders. Individual species entries are arranged according to family within the section for the order. The sample page below shows two typical entries: the top entry is taken from the amphibian section, and the bottom entry is taken from the reptile section.

family to which species belongs, written in roman type with initial capital letter

two-part scientific name, written in italic type with initial capital letter

current population status: rare, endangered, common, or locally common

common name of individual species

map indicates region or regions where individual species occurs

introduction describes physical features and other characteristics

information on distribution and habitats

details of eggs or neonates

indicates whether species is primarily terrestrial or aquatic

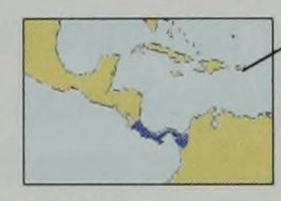
Family CENTROLENIDAE | Species *Centrolenella valerioi* | Status Locally common

La Palma Glass Frog

A small and delicate creature, the La Palma Glass Frog is so called because the skin on its underside is transparent, and its internal organs are visible. It is an expert climber with long, slender limbs and very well-developed adhesive disks on the toes, enabling it to climb stems and cling to smooth leaves. The eyes are very large and prominent. Eggs are attached to leaves hanging over streams, and the male guards them against insect predators such as wasps. Tadpoles drop into the water as they hatch and burrow into the mud on the bottom of the stream.

• **Occurrence** Central America. In tropical forest.

• **Reproduction** Lays eggs over water in the rainy season.



C. AMERICA



Length ¼–1¼in (2–3cm) | Habit Mostly terrestrial | Activity ☾

Key to Activity Symbols *For a more detailed explanation, see p.25*

- ☼ *Diurnal*
- ☾ *Nocturnal*
- ◑ *Crepuscular*
- ○ *Any time*

symbol indicates time of day when species is active

Key to Diet Symbols *For a more detailed explanation, see p.21*

- *Mammals*
- *Birds*
- *Reptiles*
- *Amphibians*
- *Eggs*
- *Fish*
- *Mollusks*
- *Worms*
- *Arthropods*
- *Vegetation*
- *Fungi*

Family TESTUDINIDAE | Species *Geochelone pardalis* | Status Locally common

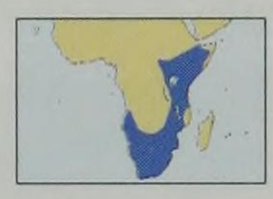
Leopard Tortoise

As a juvenile this is a very striking tortoise, the yellow carapace having black sutures around every scute and a black center to each of the 13 large dorsal scutes. As the shell grows, the dark centers are broken up and forced outward. Although primarily herbivorous, this species is reported to gnaw at bones and eat hyena feces to obtain calcium for eggshell development. Some may reach 44–88lb (20–40kg) in weight.

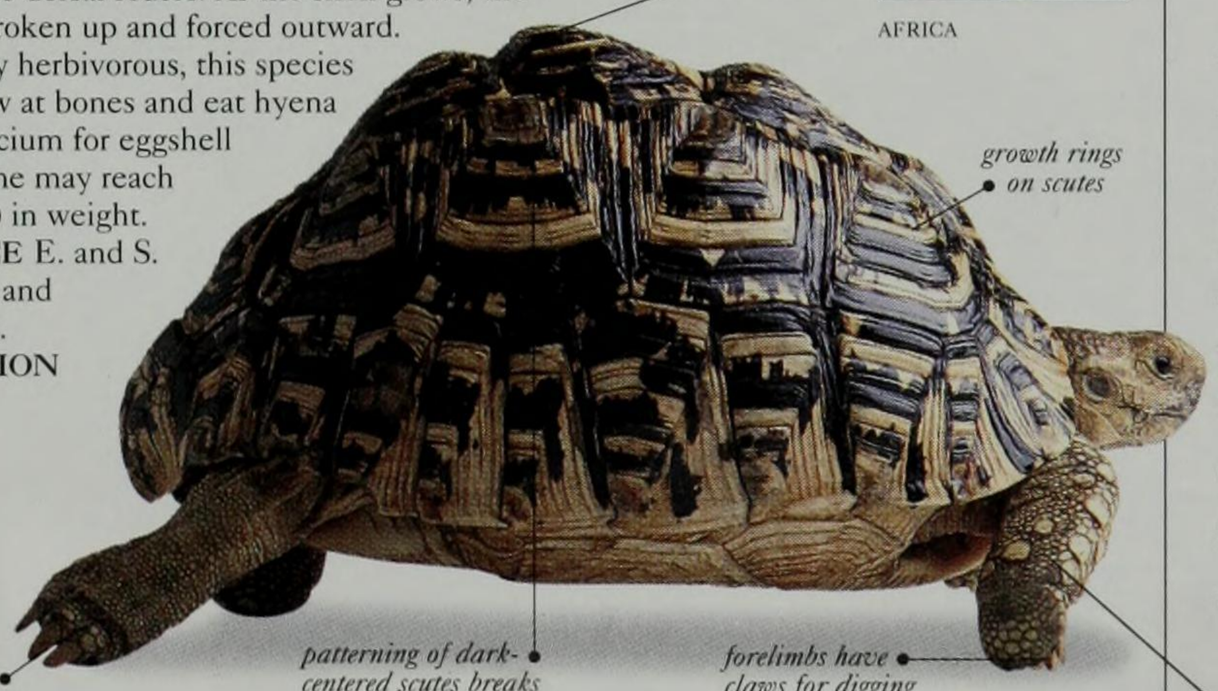
• **Occurrence** E. and S. Africa. In savanna and savanna woodland.

• **Reproduction** Lays 5–30 eggs.

• **Similar species** Tent Tortoise (*Psammobates tentorius*).



AFRICA



Length 17½–28½in (45–72cm) | Diet | Activity ☼

Key to Venom Symbols *Venom symbol may appear next to common name of some reptiles. For a more detailed explanation, see p.15*

- ☠ *Highly dangerous*
- ☠ *Potentially dangerous*

full-color photograph of species

identifies physically similar species (from same or another geographical region) that might be mistaken for described species

range of typical body lengths of adult specimens

symbol indicates main types of food consumed by adult of species (see key left); primary food source appears first

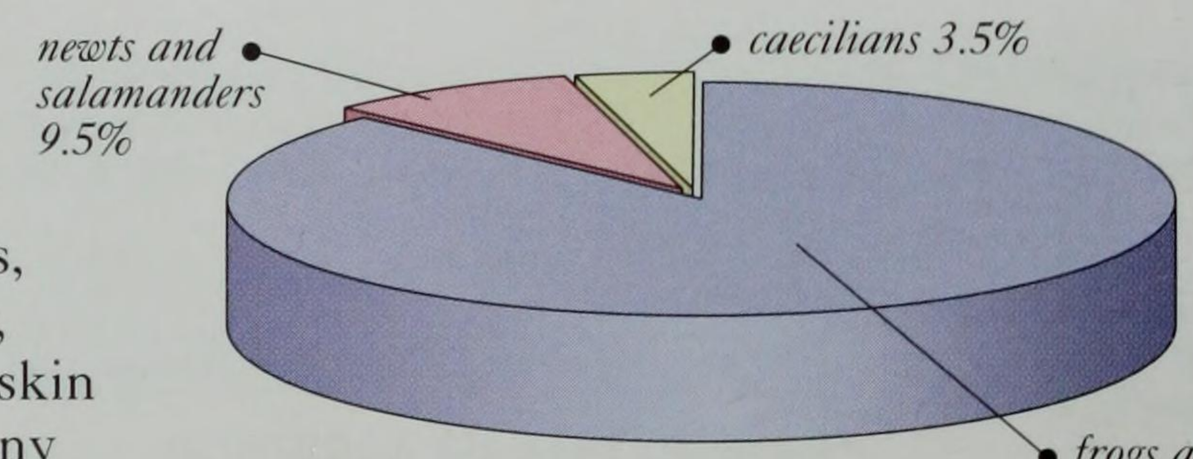
annotation highlights specific features to aid identification

WHAT IS AN AMPHIBIAN?

AMPHIBIANS ARE DIVIDED into three groups or orders: Urodeles (newts and salamanders), Gymnophionans (caecilians), and Anurans (frogs and toads). Frogs and toads have a distinctive body shape that makes them instantly recognizable, but it may be more difficult to identify newts and salamanders as their form is variable. Caecilians can be mistaken for worms or snakes.

AMPHIBIAN ANATOMY

The skin of amphibians is thin, and lacks a protective outer layer (such as the hair or feathers of mammals and birds, or the scales of reptiles). It is often moist, and the secretions produced to keep the skin moist can be toxic to deter predators. Many amphibians use their skin as a means of taking in oxygen. Most amphibians hunt by sight and have large eyes, often with a brightly colored iris. Their large eyes help them to see prey at night. Most amphibians have extremely wide mouths, which enable them to consume relatively large prey.



AMPHIBIAN ORDERS
As shown in this pie chart, frogs and toads (Anura) are by far the largest order of amphibians, comprising 87 percent of all species.

ROUND


HORIZONTAL

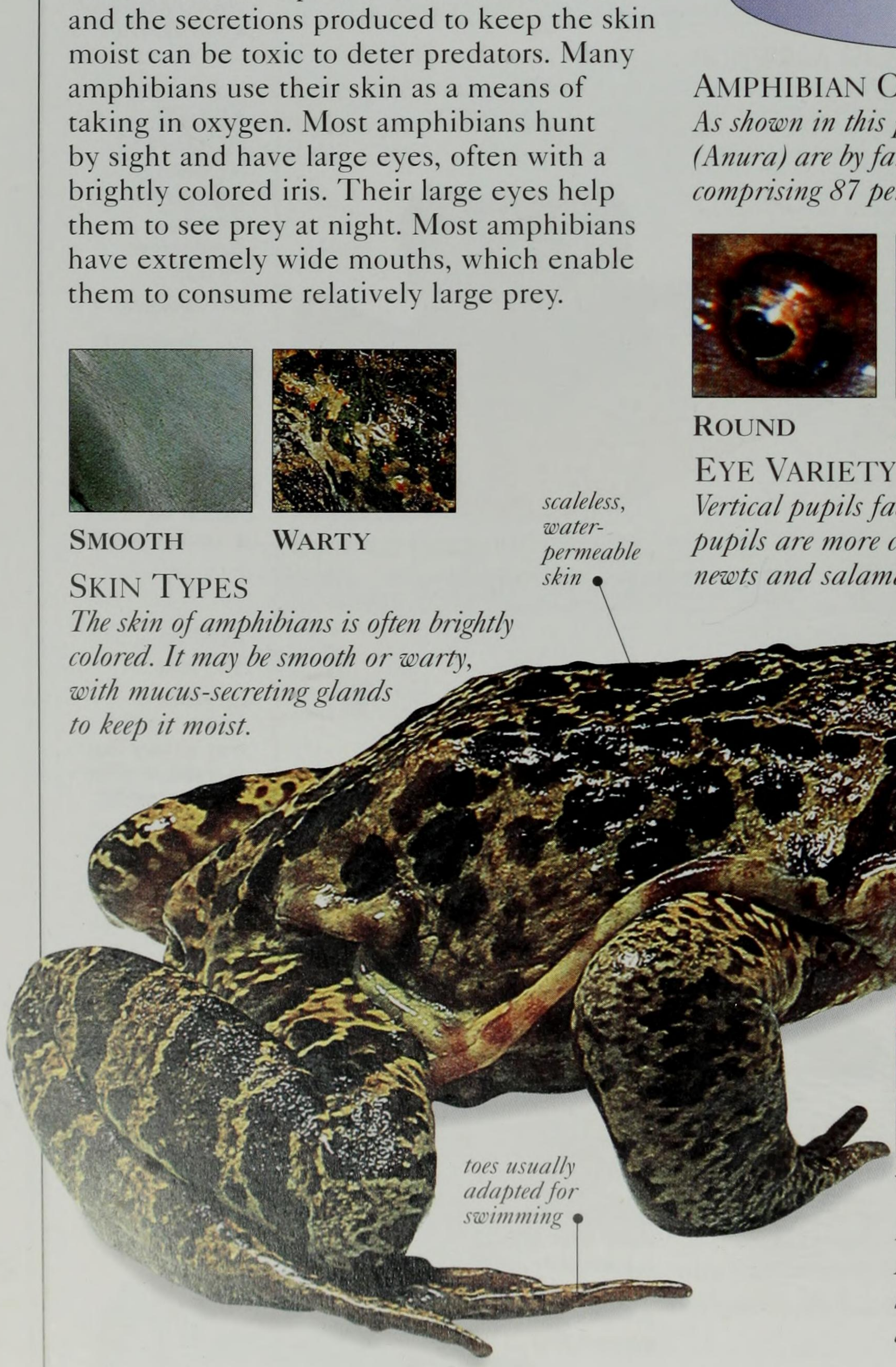

VERTICAL

EYE VARIETY
Vertical pupils facilitate night hunting; horizontal pupils are more common for daylight vision. All newts and salamanders have round pupils.

SMOOTH

WARTY

SKIN TYPES
The skin of amphibians is often brightly colored. It may be smooth or warty, with mucus-secreting glands to keep it moist.




WEBBED


STICKY

AMPHIBIANS' FEET
Amphibians' toes are often webbed, to aid swimming. They may have adhesive pads to aid climbing.

FROGS AND TOADS

Frogs and toads typically have a large head with a wide mouth; a short, rigid back; small forelimbs; and very large, muscular hindlimbs. The eyes are large and protruding. The skin is smooth and often shiny in frogs, warty and dull in toads. Patterned skin provides camouflage.

TOAD

Slow-moving and unable to climb, this Common Toad walks or hops along the ground.





TREEFROG

The Red-eyed Treefrog has smooth, shiny skin. It is very agile and has adhesive toe pads to aid climbing.



CAECILIANS

Caecilians look like large earthworms; they have no legs and there are numerous grooves around the long, thin body. The pointed head is shovel-shaped and the tail is very short. They find their prey primarily by smell.

BUILT FOR BURROWING

The Mexican Caecilian is able to burrow like a worm using its shovel-shaped head.

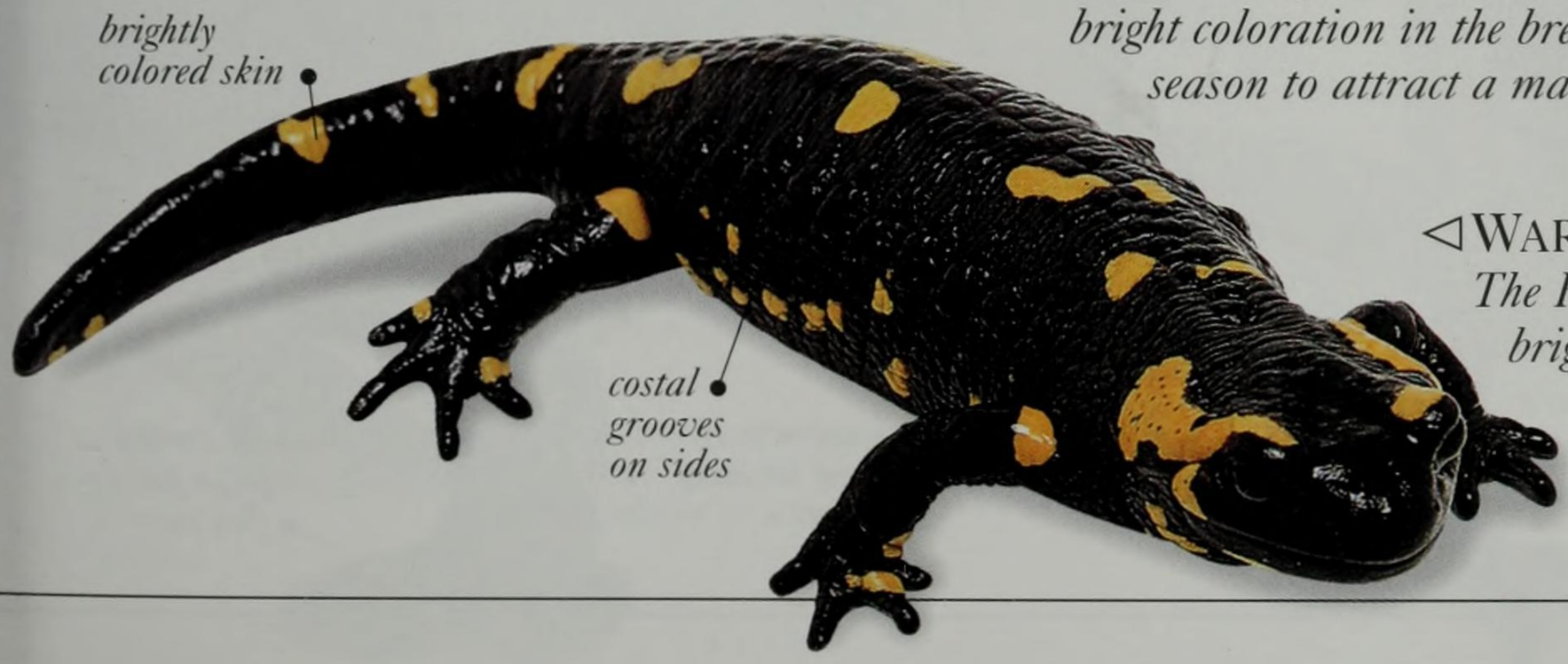
NEWTS AND SALAMANDERS

Newts and salamanders undergo less dramatic changes than frogs and toads when they metamorphose from the larval to the adult form. They have relatively small heads; long, flexible bodies; and long tails. Those species that live in water have a deep, laterally flattened tail, which they beat from side to side when swimming. The forelimbs usually have four digits; the hindlimbs five.



△ ATTRACTING FEMALES

The male Alpine Newt develops bright coloration in the breeding season to attract a mate.



◁ WARNING COLORS

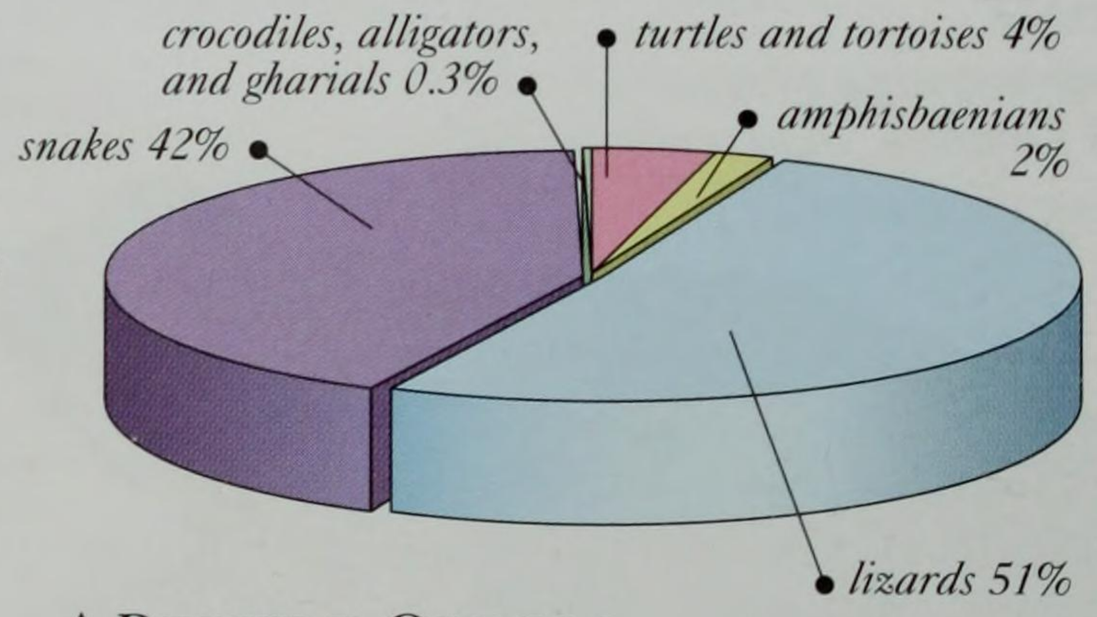
The Fire Salamander is brightly colored to warn predators that it is highly poisonous.

WHAT IS A REPTILE?

REPTILES ARE DIVIDED into four orders: Testudines (turtles and tortoises); Crocodylia (crocodiles, alligators, and gharials); Rhynchocephalia (tuataras) and Squamata (scaled reptiles). The Squamata are further divided into three suborders: Sauria or Lacertilia (lizards); Amphisbaenia (worm-lizards); and Serpentes or Ophidia (snakes).

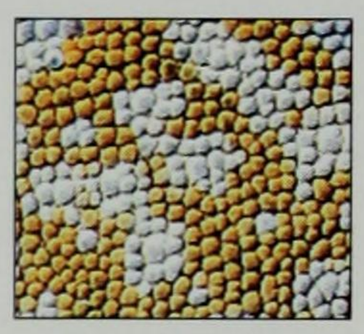
REPTILE ANATOMY

The waterproof skin of a reptile is usually covered by scales or reinforced by osteoderms (bony skin plates), but lacks the skin glands found in mammals. Coloration may be cryptic to avoid detection, or gaudy to advertise a warning. The development of senses varies between groups. Specialized organs, such as the thermosensory facial pits of certain snakes and the chemosensory tongue of snakes and some lizards, are highly advanced developments for prey location and capture.

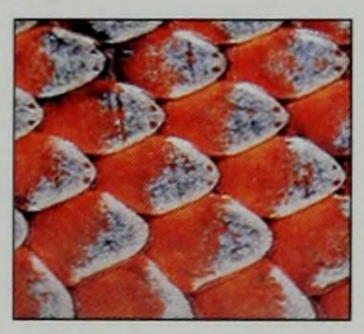


△ REPTILE ORDERS

Snakes, lizards, and amphisbaenians (the Squamata) comprise 95% of all reptiles. At 0.03%, the tuataras are too small a group to represent on this pie chart.



GRANULAR



SMOOTH



KEELED

△ SCALES

Lizard skin varies from paperlike, granular gecko skin to the beadlike scales of heloderm lizards. Snake scales may be smooth (as in pythons) or keeled (as in desert vipers or aquatic keelbacks).



△ SHEDDING SKIN

As most reptiles grow, they shed the transparent top layer of their skins. Whereas snakes can shed their skins in one piece, the limbs of lizards prevent them from doing so, and they tend to slough their skins in pieces.



HORIZONTAL



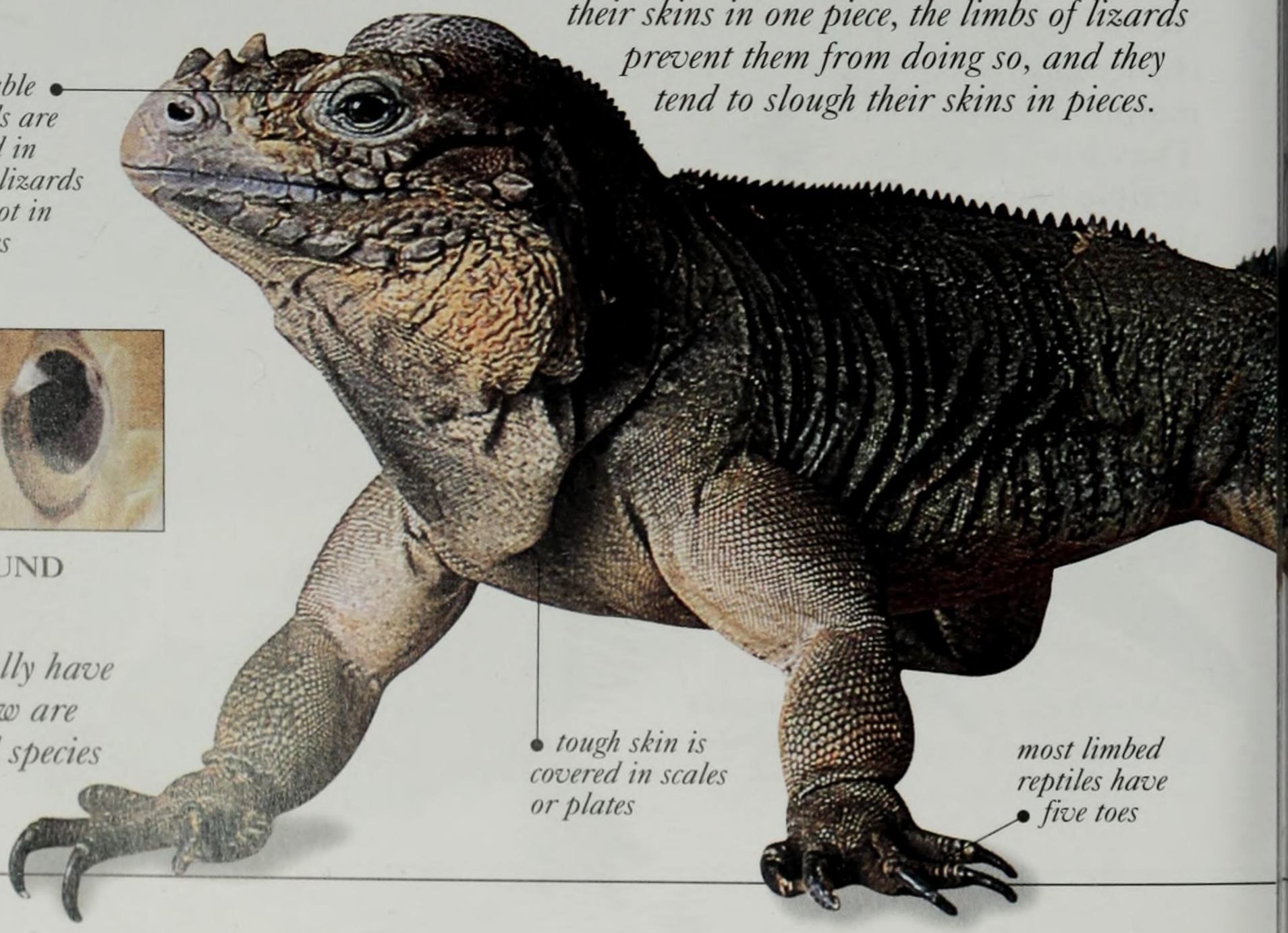
VERTICAL



ROUND

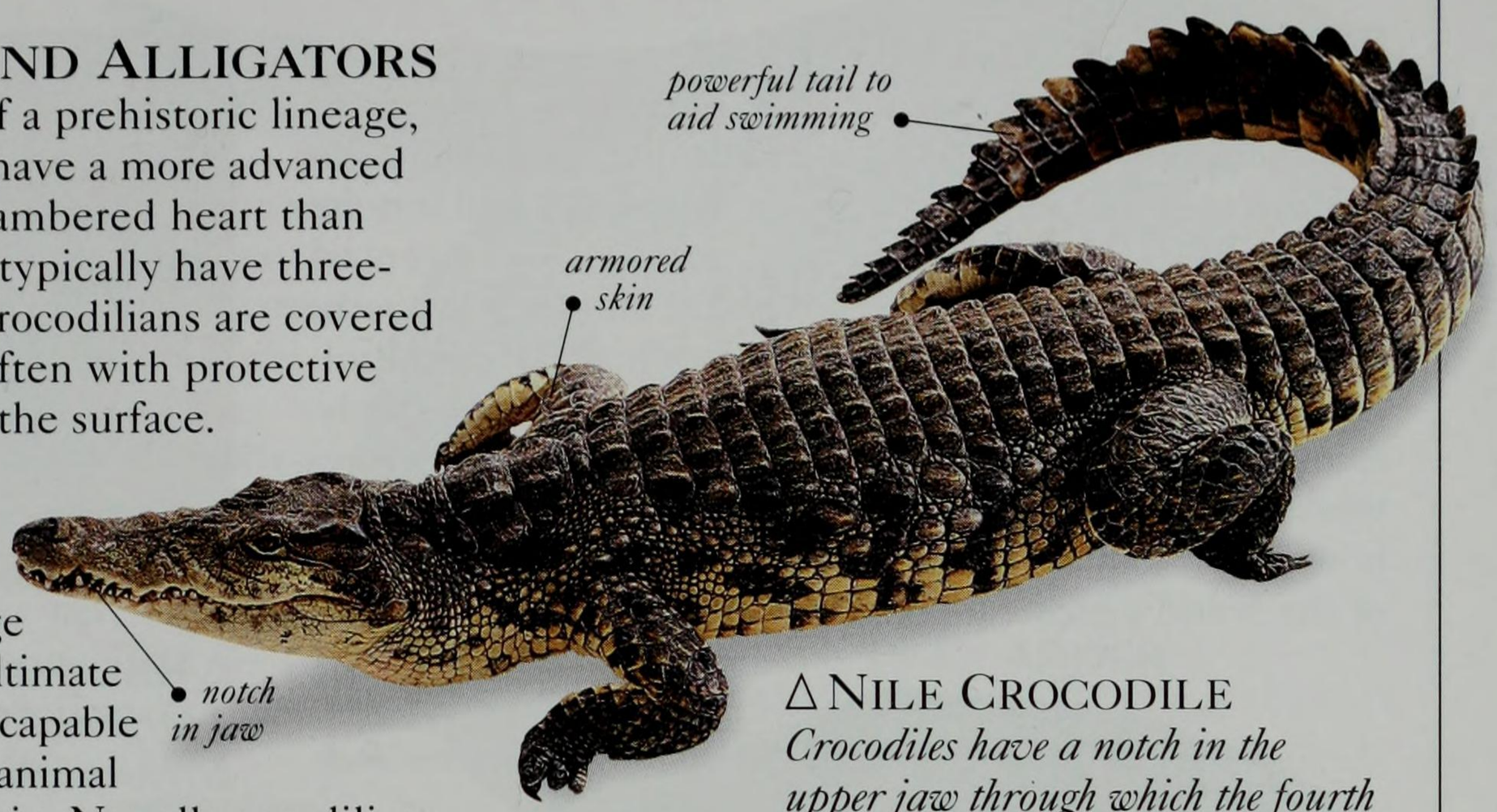
△ EYE TYPES

Diurnal reptiles usually have round pupils but a few are horizontal; nocturnal species have vertical pupils.



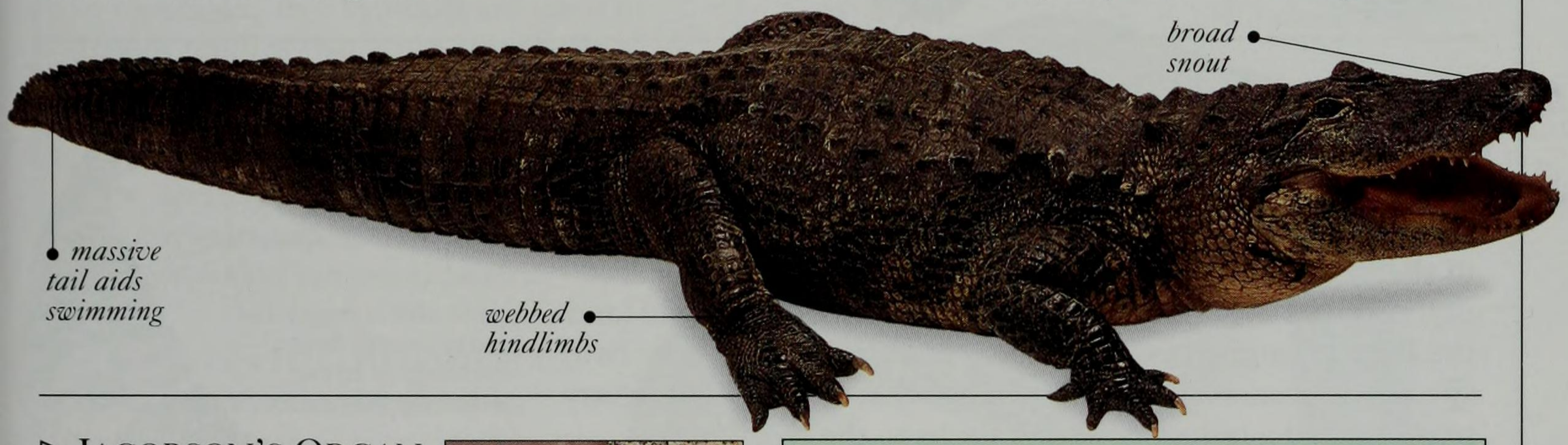
Crocodiles and Alligators

Although survivors of a prehistoric lineage, modern crocodilians have a more advanced and efficient four-chambered heart than most reptiles, which typically have three-chambered hearts. Crocodilians are covered in leathery armour, often with protective osteoderms beneath the surface. With their muscular tails, webbed hind-feet, and powerful tooth-filled jaws, large crocodilians are the ultimate freshwater predators, capable of killing almost any animal that enters their domain. Not all crocodilians are dangerous to humans: the large Ganges Gharial, for example, is a fish-eating specialist. Gharials (characterized by a long, slender snout) belong to a separate family from crocodiles and alligators. Caimans are South American alligators.

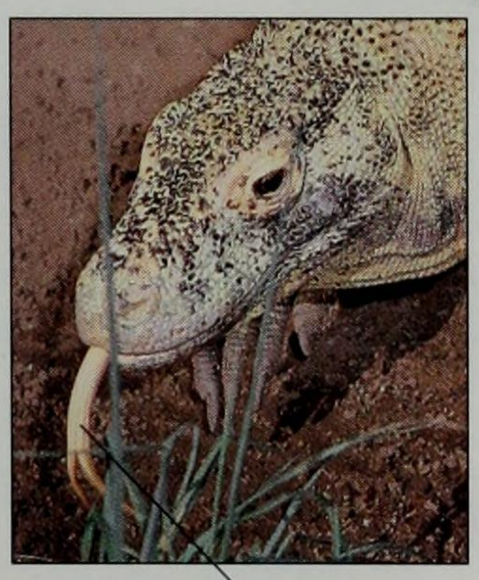


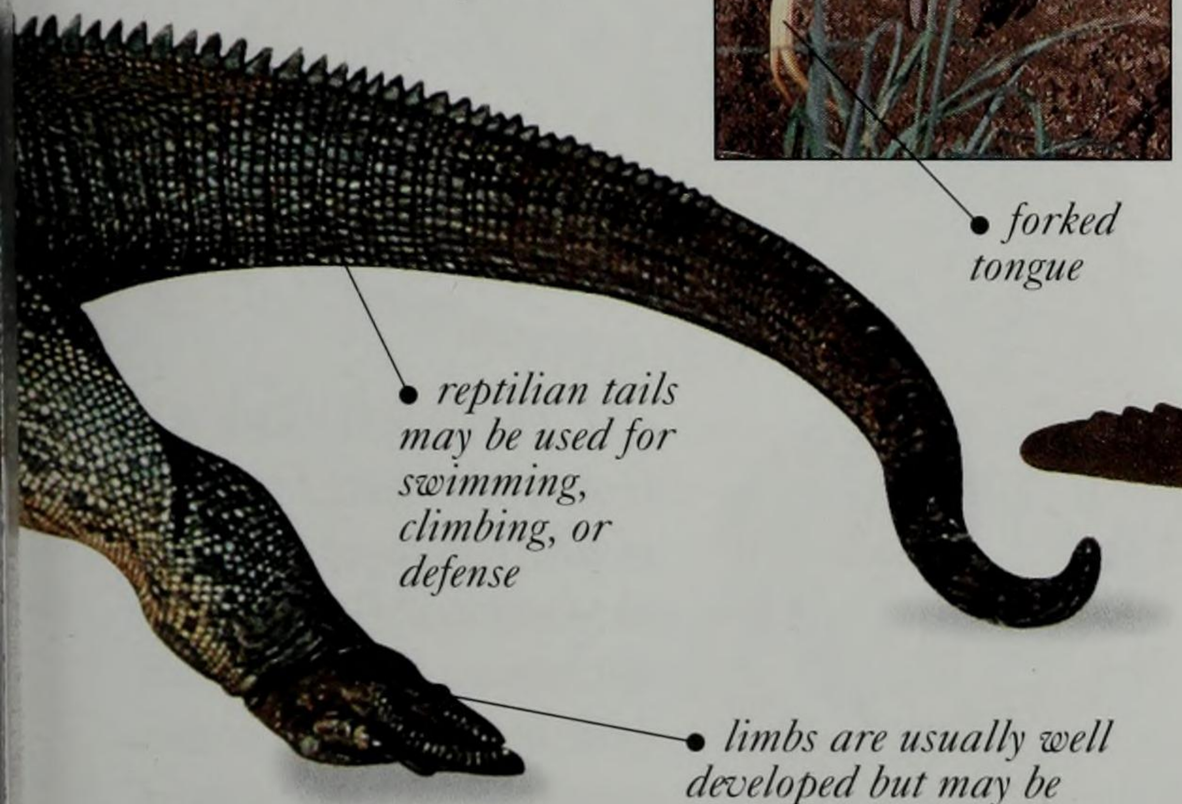
△ Nile Crocodile
Crocodiles have a notch in the upper jaw through which the fourth tooth of the lower jaw protrudes.

▽ American Alligator
The alligator's broad snout completely covers all its teeth when the jaws are closed. The American Alligator is a heavily built swamp dweller; its blackish brown body is often covered in algae.



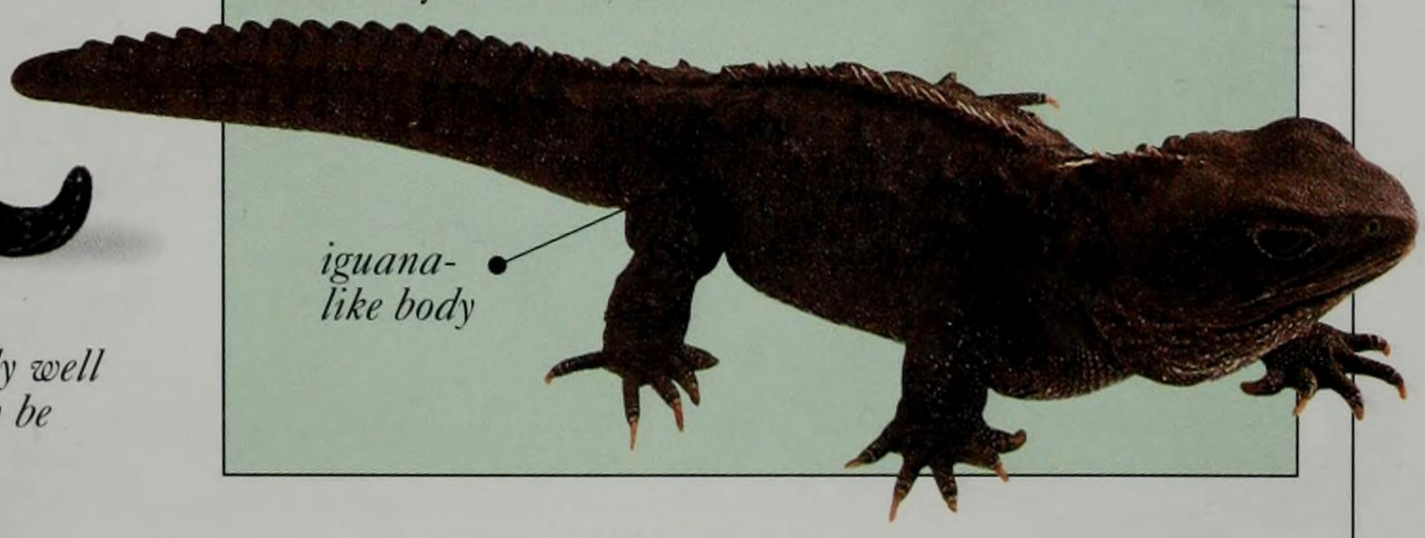
▷ Jacobson's Organ
The tongue of snakes and many lizards transfers information to the chemo-sensitive Jacobson's organ in the roof of the mouth.





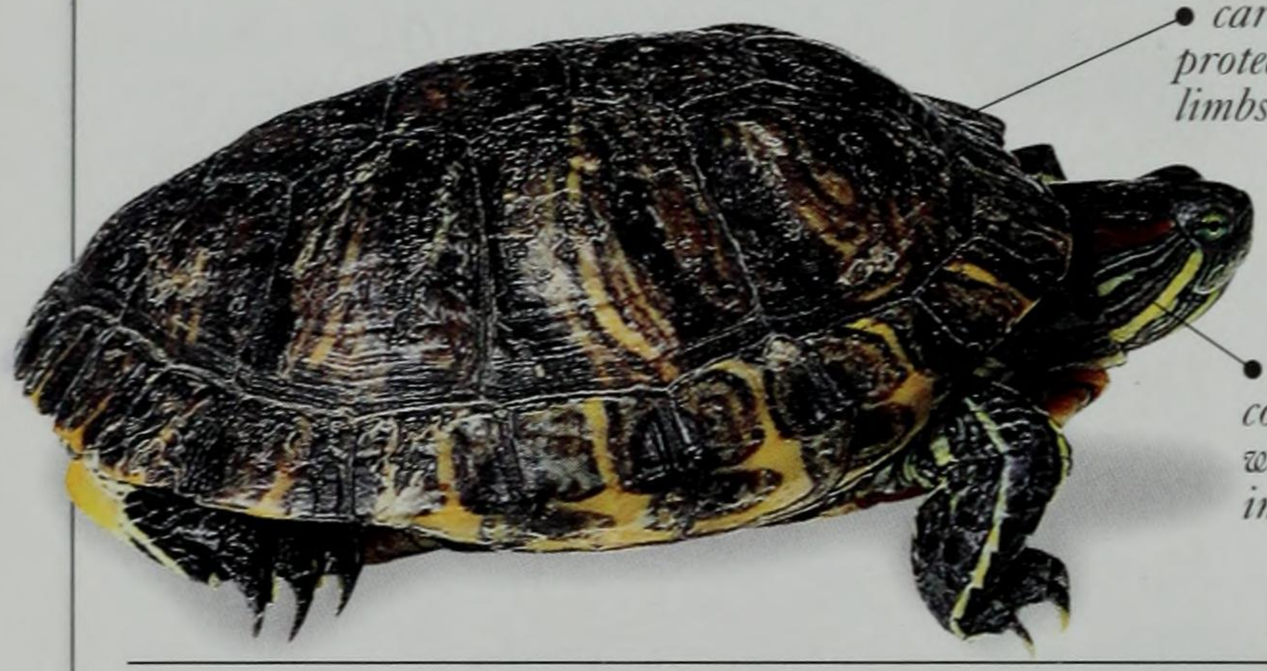
Tuataras

With all their close relatives extinct for over 65 million years, the two surviving species of tuatara on remote islands off New Zealand could be considered to be living dinosaurs. These curious reptiles are relatively small, slow growing, and have extremely slow reproductive and metabolic processes. Although they resemble brown iguanas, they are not closely related to snakes and lizards.



Turtles and Tortoises

Very different in appearance from other living reptiles, the ancestors of turtles and tortoises diverged from other reptiles over 230 million years ago. All turtles and tortoises have a shell consisting of a dorsal carapace and a ventral plastron, but in some species it is soft and leathery rather than hard and rigid. Most species live in freshwater but there are eight marine turtles and a large family of truly terrestrial tortoises. Most terrestrial species are herbivores, while most aquatic species are omnivores. The sea turtles, however, are much more specialized. They are also some of the world's greatest oceanic navigators and travelers.





△ Red-foot Tortoise
A large and slow-moving rainforest herbivore, the Red-foot Tortoise relies on its strong carapace to protect it from predators.

◁ Common Slider
A popular pet, the American Common Slider is a typical omnivorous freshwater turtle with a tough shell.

Lizards

The lizards are the most diverse suborder of reptiles, and they are also the most frequently encountered. Ranging from tiny geckos to giant monitor lizards, there is a vast diversity in shape, skeletal structure, color, reproduction, behavior, defense, and diet. Although many lizards look fearsome (and the bites of large lizards can cause serious injuries), only two species are venomous. Within lizards there is an evolutionary trend toward a reduction of the limbs to the point of complete leglessness. The loss of eyelids and ear openings may also be considered advanced traits in lizards.



△ Thorny Devil
Some lizards are specially adapted to live in extreme conditions. The Thorny Devil inhabits arid deserts, where it lives on a diet of ants. The prickly body collects condensed desert dew and channels it to the mouth.



◁ Leopard Gecko
One of the most familiar of all lizards in captivity, the Leopard Gecko is a nocturnal desert dweller. Like most lizards, it is small, inoffensive, and insectivorous.

SNAKES

Snakes are characterized by their lack of limbs, eyelids, and external ear openings. Their entire body is covered in scales, which may be smooth or keeled. Unlike some lizards, which are herbivorous or at least omnivorous, all snakes are carnivorous. Snakes employ a variety of methods of locomotion and prey-handling. Some are among the most venomous animals on earth. They may lay eggs or give birth to live young. The primary sense organ of all snakes is the forked tongue, but some species are also sensitive to the body heat of their prey.



PUFF ADDER

A large, stout-bodied venomous snake, the Puff Adder possesses the strongly keeled scales associated with species found in arid habitats. Its venom is potentially lethal.

HOW DANGEROUS?

In this book, two symbols are used to denote reptiles that have potentially dangerous or highly dangerous venom.

HIGHLY DANGEROUS

Species considered capable of delivering a dangerously venomous bite, including all the front-fanged venomous snakes.

POTENTIALLY DANGEROUS

Venomous snakes that have large enough mouths to enable them to bite and inject large quantities of a relatively weak venom into a human.

GARTER SNAKE

Fast moving, alert, and agile, the Garter Snake preys on frogs and fish. This non-venomous species is often kept as a pet.

AMPHISBAENIANS

Overshadowed by the other squamates (snakes and lizards), the usually legless amphisbaenians or worm-lizards are slender, secretive, burrowing reptiles, often mistaken for snakes or worms. Their heads are armoured for burrowing, and their tiny body scales are arranged in annular rings, further enhancing their wormlike appearance.

AMPHIBIAN REPRODUCTION

MOST AMPHIBIANS gather in large numbers at a specific time of year (sometimes for only a few days) in order to breed. The breeding season is usually triggered by warm weather in temperate regions, and by the onset of the rainy season in the tropics. Within mating groups, males have to compete to attract females. Male frogs and toads, and many salamanders, clasp the female prior to mating in a tight embrace known as amplexus. In frogs and toads, fertilization is external; in most salamanders, newts, and caecilians, fertilization is internal.

LIFE CYCLE

All amphibians have a life cycle that goes through three distinct phases: egg, larva, and adult, illustrated here by the Common Toad (*Bufo bufo*). In frogs and toads, eggs are produced in clumps or strings. The eggs hatch into tiny larvae, commonly known as tadpoles, which grow rapidly and develop legs. At metamorphosis, the tadpoles leave the water, losing their tails. The tiny adults may spend several years on land, growing to adult size, before eventually returning to the water to find a mate and reproduce.



▷ MATING

Prior to mating, the toad sits on the back of the female, holding her tightly with his powerful forelimbs, while the female searches for a place to deposit her eggs. The male's hindlimbs are free to kick out at rival males. The amplexus position ensures that when the female releases her eggs they are very close to the male's vent, thus maximizing the chance that his sperm will fertilize them.



▷ EGGS

Toads produce many thousands of small, black eggs, laid in long strings that are wrapped around plants. The eggs hatch into tiny tadpoles that move very little for a few days but grow by absorbing the remaining egg yolk in their bodies. Tadpoles initially have no legs, and they swim in search of food by beating their tails. An easy meal for many kinds of predator, the tadpoles of toads are nevertheless distasteful to most fish.



◁ FINDING A MATE

Many frogs and toads call loudly to attract females during the breeding season, often forming a dense chorus. The call is produced by the male filling a large vocal sac with air that is shunted back and forth between the lungs and the vocal sac, passing over the vocal cords.

▽ ADULT TOAD

Toads grow slowly during adult life, but their final size is vital for their success in reproduction. Larger females lay more eggs, and larger males are more likely to be successful in competing for matings. Adult toads return to the water only for the few days that they need to breed.





◁ YOUNG TOAD

At metamorphosis, the tail and gills are absorbed into the body and the tiny young toad, now breathing with lungs, emerges onto land, and soon starts to hunt for insect prey. It is very vulnerable to drying out and typically leaves the water only on rainy days.



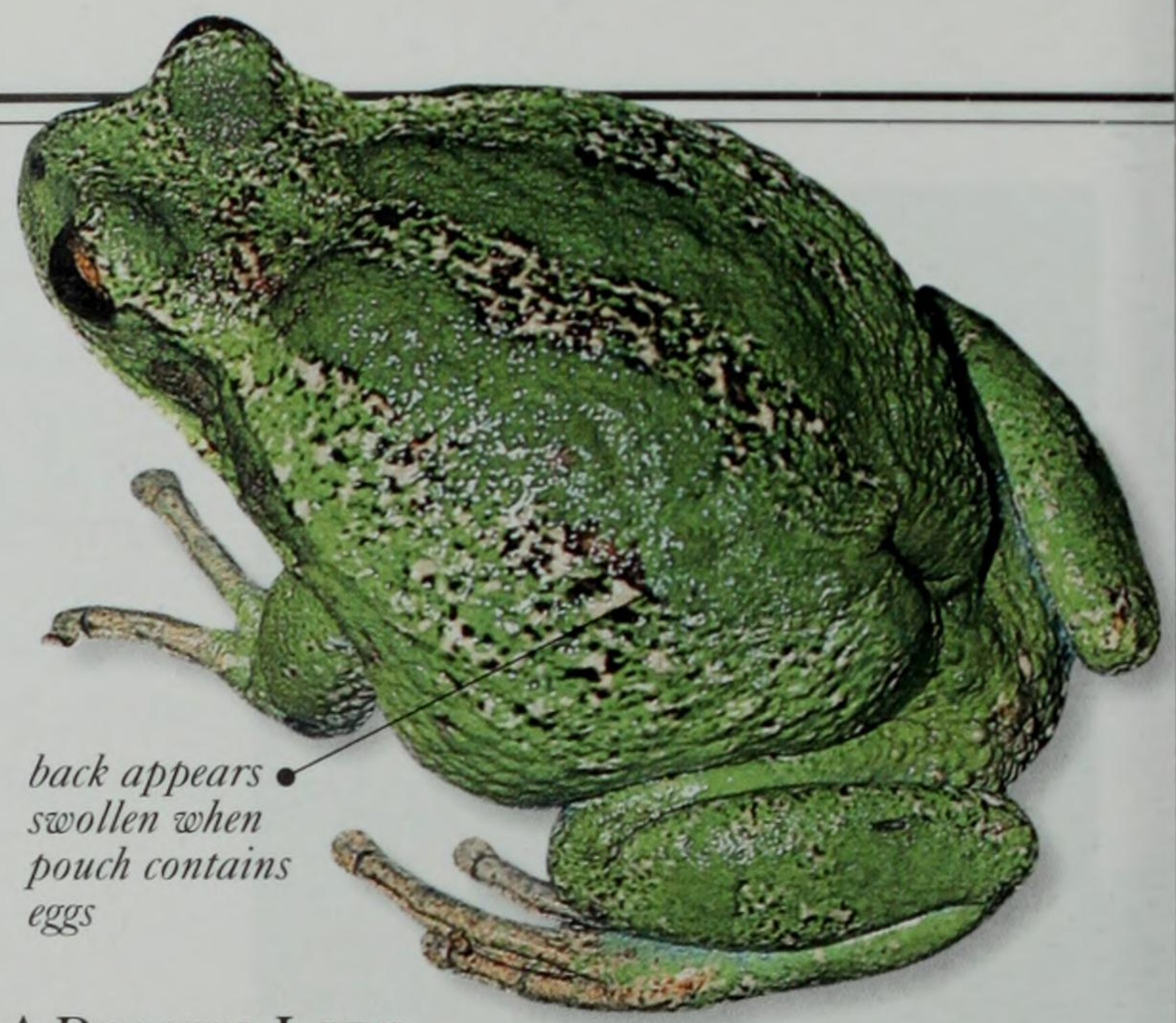
◁ OLDER TADPOLES

As tadpoles grow, their limbs develop and their body shape becomes more streamlined. The hindlimbs are the first to appear and the tail shortens. Tadpoles often swim in large schools, affording them some protection against predators and possibly also stirring up their microscopic food.

Alternative Strategies

There are many variations on the typical three-stage life cycle of an amphibian. Some salamanders do not reach the typical terrestrial adult form, but become sexually mature while still in the aquatic larval state, with external gills. Some amphibians do not have free-swimming larvae; instead, the larval stage is completed inside the egg, which hatches to produce a miniature adult.

Care and protection of the young are equally varied. Many salamanders guard their eggs against predators and fungal infections, and some newts carefully wrap each egg in a folded leaf. Many frogs protect their eggs by laying them in a foam nest that keeps them moist and deters predators. Parental care in frogs also takes many forms. The developing eggs may be retained in some part of the body, including the mouth, skin, stomach, or a special pouch on the back or thighs. Poison-dart frogs carry their tadpoles from pool to pool.



△ Pouch Life

The female Marsupial Frog has a pouch on its back, which may contain over a hundred eggs. The eggs, placed there during mating, develop into tiny adult frogs that push their way out of the pouch when they are fully developed.



▷ External Gills

The larvae of salamanders and newts often have large, feathery external gills. The conspicuous gills of this Tiger Salamander will disappear after about 12 weeks.

▷ Female Great Crested Newt

This female Great Crested Newt is gluing a leaf into position around one of her eggs by pressing her hindfeet together. This process provides some protection for the eggs against predation and disease.





△ Foam Nest

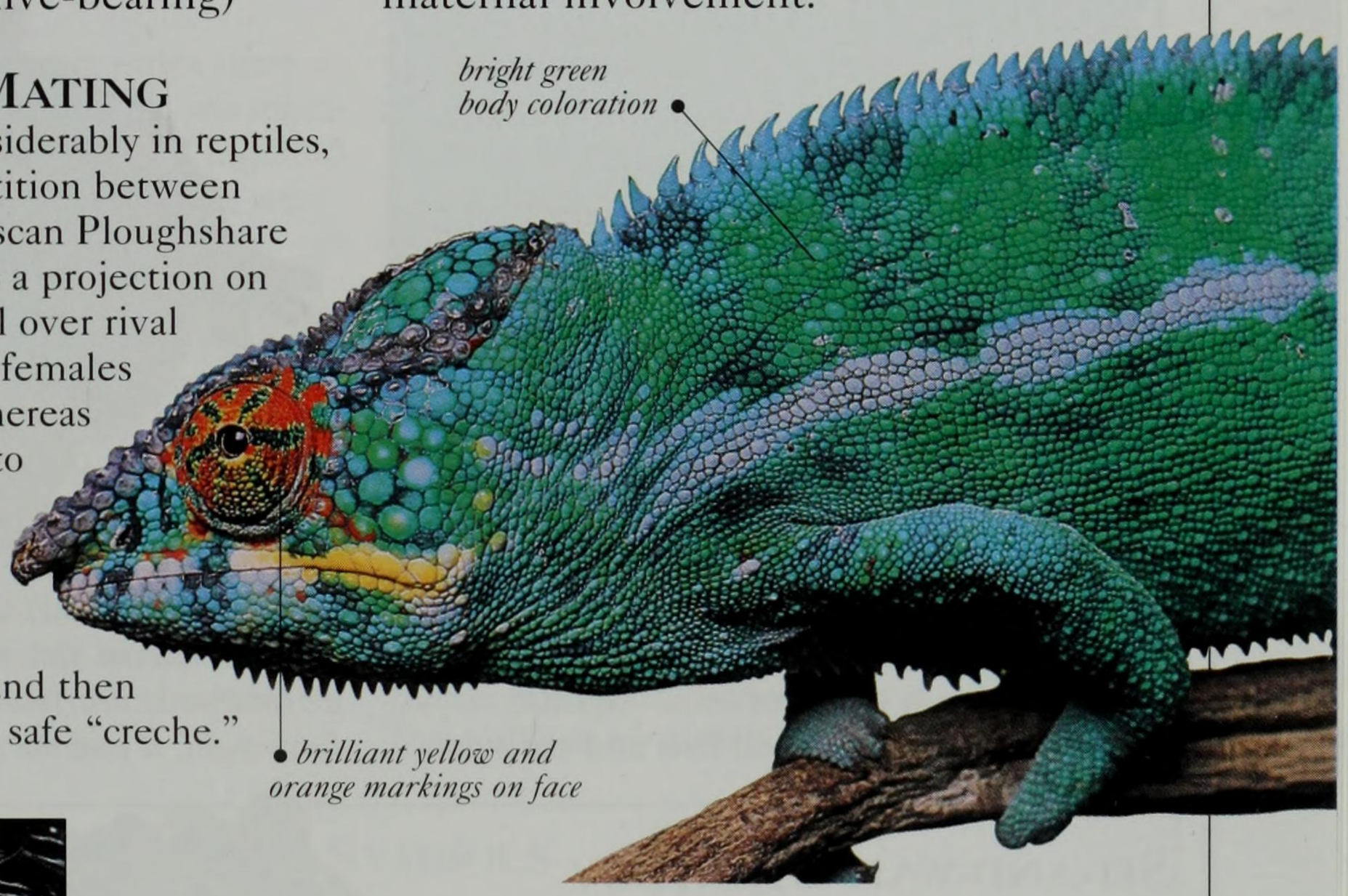
Male and female Foam-nest Frogs congregate to create a vast communal foam nest to hide their eggs. The nest is suspended over a pond.

Reptile Reproduction

Reptiles do not possess the array of elaborate breeding strategies of amphibians, but their propagation is still highly diverse. Reproduction involves internal fertilization. Oviparity (egg-laying) and viviparity (live-bearing) are both present in reptiles, but rarely within the same species. Male reptiles find, court, and mate receptive females. Typically, female reptiles lay their eggs or give birth without any further maternal involvement.

Courtship and Mating

Courtship rituals vary considerably in reptiles, often with violent competition between males. The male Madagascan Ploughshare Tortoise, for example, has a projection on the front of its shell to roll over rival males. Male snakes court females by tracking their scent, whereas male crocodilians bellow to attract a mate. Although most reptiles abandon their eggs, crocodilians are a notable exception – females guard their nest and then remove the hatchlings to a safe "creche."





◁ Cloacal Spurs
During courtship, male boas and pythons stimulate their mates using cloacal spurs. The spur shown here belongs to a male Burmese Rock Python. Female Burmese Rock Pythons can lay over 30 eggs.

△ Display Colors
Many reptiles have elaborate crests or striking coloration to attract a mate. This Panther Chameleon is one of the most brilliantly colored of all lizards. This species has a startling turquoise stripe and sunburst orange eye markings.

Eggs or Live Young

Crocodilians, turtles, tortoises, and geckos lay relatively hard-shelled eggs, but those of other lizards and snakes are soft and leathery. The embryo hatches by slitting the shell with its egg tooth. Many snake and lizard species are live-bearers, producing neonates (newborns) in embryonic membranes from which they escape within seconds of birth.



△ Neonate Boa
Here, an Argentine Rainbow Boa emerges from its fetal sac immediately after its birth.

▷ Hognose Snake Hatchling
The soft, leathery egg does not crack but collapses as a hatchling emerges.



AMPHIBIAN FEEDING HABITS

ALL ADULT AMPHIBIANS are carnivores, feeding on a wide variety of living prey, mostly invertebrates such as insects, earthworms, millipedes, slugs, and snails. An amphibian's mouth can open very wide, enabling it to eat some surprisingly large items of food. Most amphibians are too slow-moving to be able to chase their prey, and the vast majority are "sit and wait" predators.

PART-TIME FEEDERS

The food requirements of amphibians are very much smaller than those of mammals and birds of comparable size; only in warm weather do they need to eat frequently. In winter, cold temperatures prevent them from being active and they survive on fat reserves that they have built up during the summer months. Newts, salamanders, and caecilians usually eat slow, soft-bodied prey, such as worms and slugs. Some larger amphibians, such as the notorious Marine Toad, will prey on small mammals and even birds. Some amphibians are specialist feeders. For example, the Western Narrow-mouthed Toad thrives on a diet of ants. Aquatic amphibians will eat small fish and tadpoles.



MANDARIN SALAMANDER
This Mandarin Salamander is swallowing a worm that is nearly as long as itself. After such a large meal, it will not have to eat for several days.

SIT-AND-WAIT STRATEGY

Some frogs will leap considerable distances to catch prey, but most amphibians use their long, sticky tongue to ambush passing prey. Amphibians are generally very well camouflaged, often with elaborate patterning, and they are able to remain motionless for long periods of time. Other amphibians, such as the Green Toad, will forage for slow-moving prey.

▽ CAPTURING PREY
Though extremely slow in its general movements, this Common Toad has a quick-fire, sticky tongue which it can flick out to capture its prey.



ORNAMENTAL HORNED TOAD

△▷ HORNED TOAD
The cryptic pattern on a horned toad provides perfect camouflage as it awaits its victim. It can capture and ingest prey, such as this mouse, nearly half its own size.



HORNED TOAD

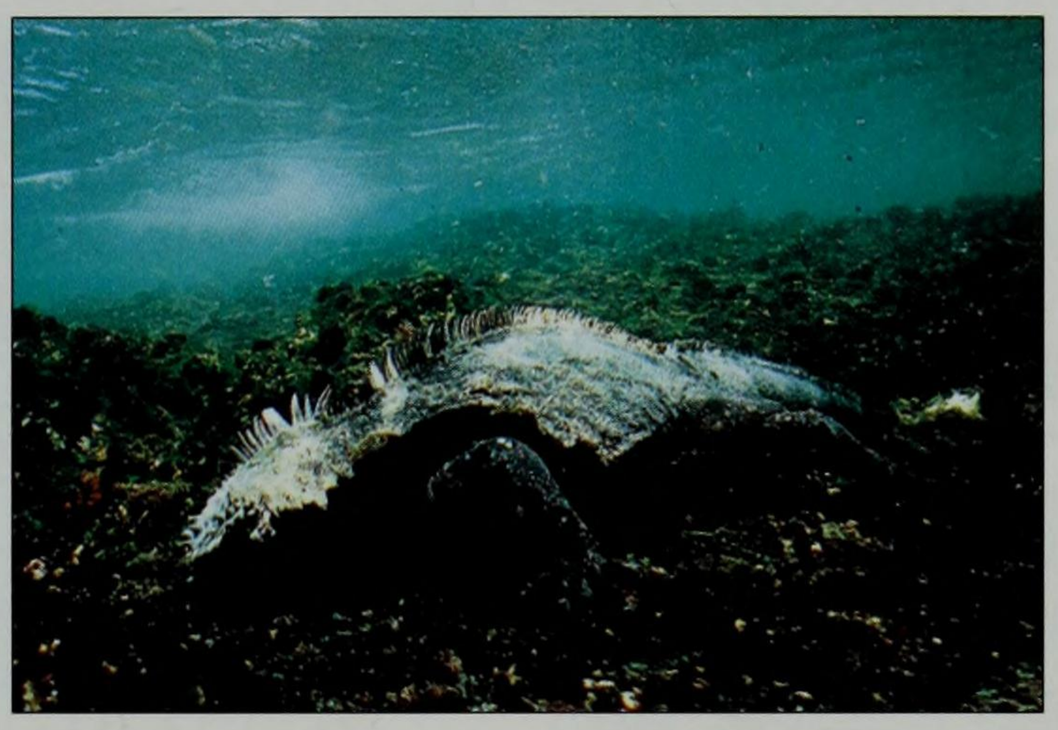


Reptile Feeding Habits

Most reptiles, including all crocodilians and snakes, are carnivores. Others are omnivorous; and a few are strict herbivores. Most smaller lizards and tuataras feed mainly on arthropods, but larger lizards may take much larger prey. Most amphisbaenians feed on soft invertebrates. The very wide range of reptile strategies for capturing and subduing prey is illustrated below.

Herbivores

In order to digest vegetation, reptiles need a specialized gut containing symbiotic microbes capable of fermenting the cellulose of ingested leaves. Most lizards that feed on leaves are iguanas or their close relatives, but a few other reptiles have also evolved specialized guts. Monkey-tail Skinks and ground-dwelling Rhinoceros Iguanas, in the Caribbean, eat plants containing compounds that are potentially deadly to other herbivores. Tortoises are typical herbivores – slow-moving, terrestrial, defenseless grazers. Hingeback Tortoises and Wood Turtles also feed on fungi. Overall, however, there are few entirely herbivorous reptiles compared to the vast number of completely carnivorous species.



Marine Herbivore

The Galapagos Marine Iguana is one of the most unusual herbivores. The only truly marine lizard, it dives into the cold ocean to take mouthfuls of seaweed from the seabed.

Diet Symbols

In this book, the wide variety of lifeforms consumed by reptiles are represented by eleven symbols, which are explained below. Where relevant or of particular interest, more specific information on feeding habits is given in the text for each species entry.



Mammals
Preys on mammals ranging from rats and mice to antelope and wildebeest.



Eggs
Eats eggs of birds and reptiles. Some reptiles are specialist egg feeders.



Arthropods
Feeds on arthropods. Arthropods such as insects and spiders provide the bulk of the diet of most small reptiles. The symbol also represents aquatic crustaceans, such as crabs and crayfish, which are preyed upon by some reptilian species.



Birds
Preys on birds. Some crocodilians, snakes, and large lizards eat large wading birds.



Fish
Preys on fish. Some crocodilians and turtles feed largely on fish species.



Reptiles
Preys on other reptiles. Snakes, particularly, feed on smaller reptilian species.



Mollusks
Feeds on gastropods, such as slugs and snails, and on marine mollusks.



Vegetation
Feeds on plant matter. Many tortoises and turtles are largely herbivorous.



Amphibians
Feeds on amphibians such as frogs and toads. Toxic species may be avoided.



Worms
Feeds on worms. Also symbolizes other soft-bodied invertebrates.



Fungi
Includes fungi in diet. Relatively few reptile species will feed on fungi.

Range of Carnivores

Reptilian carnivores range from tiny geckos feeding on flying insects attracted to light, to Nile Crocodiles ambushing wildebeest. The majority of lizards feed on invertebrates. Some larger lizards, however, such as monitor lizards and the South American Tegus, feed on small mammals and smaller lizards as well as carrion and bird or reptile eggs. The world's largest lizard is the Komodo Dragon, which preys on deer but will take other large mammals, even humans. All snakes are carnivores, but they can be loosely subdivided into vertebrate and invertebrate feeders. Most reptiles are generalist feeders, eating a variety of prey types, but there are also many specialist feeders, one of the most curious being the American Horned Lizard, which feeds exclusively on ants. There are even snakes that specialize in eating scorpions or centipedes.



Moorish Gecko Eating Locust

Insects are the primary food of most small to medium-sized lizards. Since few are dangerous to the lizard, or of large size, they require little more than powerful jaws to crush the exoskeleton prior to swallowing. Because they are extremely numerous, insects can support a large lizard population.

Specialist Feeders

Blindsnakes feed primarily on termites; slug-eaters and thirst snakes feed on terrestrial mollusks; and mangrove watersnakes eat crabs. The King Cobra feeds primarily on other snakes, including pythons, while coralsnakes will take any cylindrical prey, including eels, other snakes, amphisbaenians, and caecilians. Anacondas, the African pythons, and the Brown Water Python have been recorded preying on crocodilians, and large anacondas and pythons are well known for their ability to swallow very large mammals, including humans. Some turtles are also specialist feeders: Leatherback Sea Turtles feed mainly on jellyfish, Hawksbill Turtles primarily feed on sponges, and the Matamata is expert at catching fish.

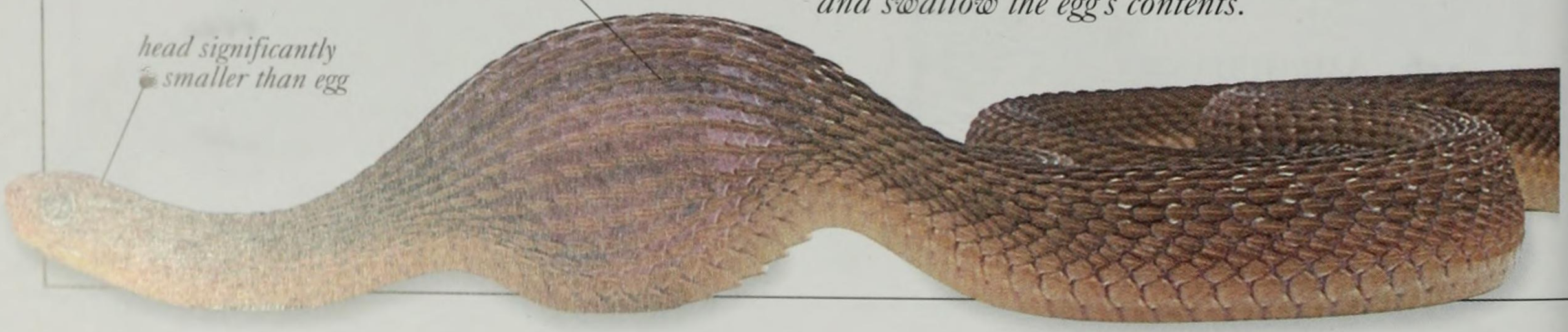


△ Snake-eating Snake

This mildly venomous Crowned Snake makes an easy meal for the highly venomous Sonoran Coralsnake. Snakes may be swallowed head or tail first, whereas prey with legs is ideally eaten head first.

▽ African Egg-eater

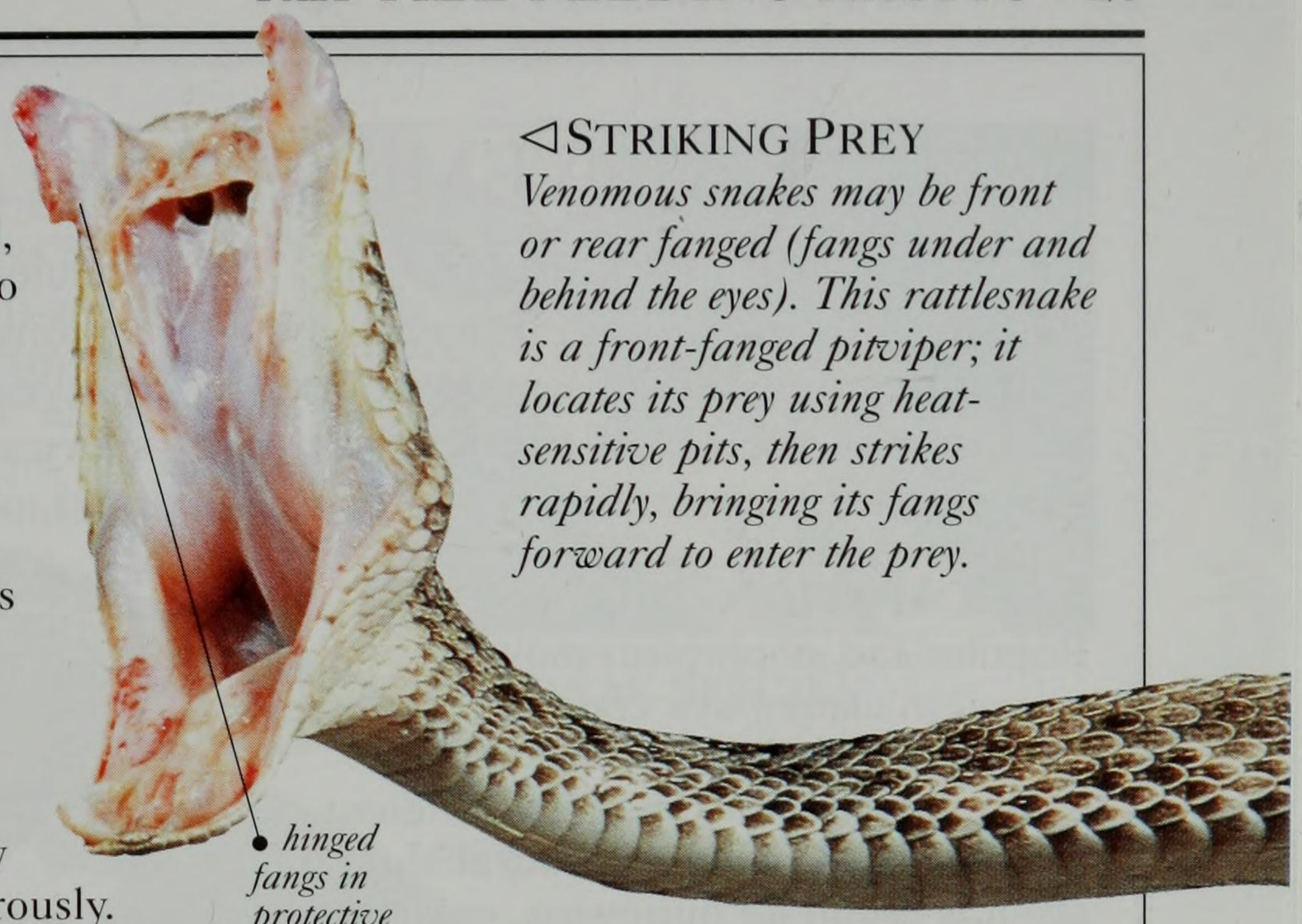
An egg-eating snake can engorge a whole bird's egg. After rupturing the egg within its throat, the snake will expel the shell remains from its mouth and swallow the egg's contents.



Catching Prey

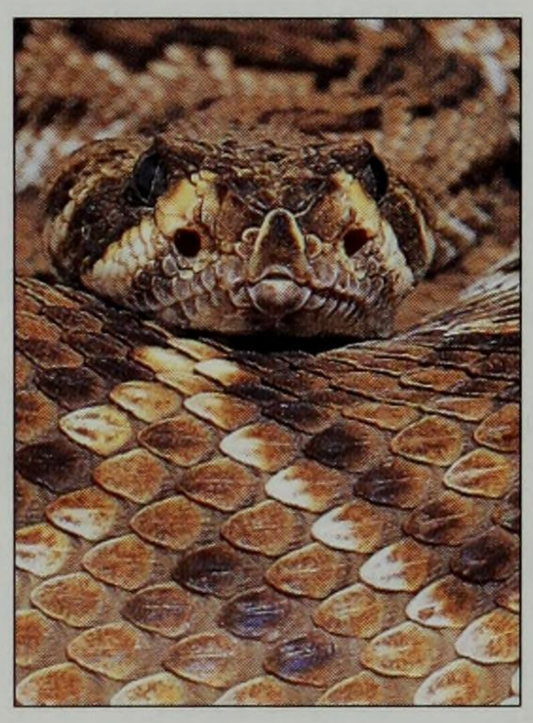
Reptiles may actively stalk or lie in ambush for their prey. Once captured, the prey must be immobilized prior to ingestion. Small, harmless prey such as insects, eggs, fish, frogs, or small lizards may be swallowed alive. Larger animals must be killed before being eaten, especially those with claws and teeth. Large monitor lizards pummel their prey on the ground or crush it with their powerful jaws. Aquatic turtles use their front claws to rip prey apart. Crocodilians drown their victims and dismember them by either spinning or shaking them vigorously.

Snakes use either constriction or venom to kill. Constriction is employed by many snakes from pythons to cornsnakes – the snake coils its muscular body around its prey to prevent it from breathing. Highly venomous snakes, such as cobras and vipers, strike their prey and inject a fast-acting venom that rapidly causes death. Snakes are forced to swallow their meals whole, but they can articulate (not dislocate) their lower jaws to engorge prey that is broader than their own heads.



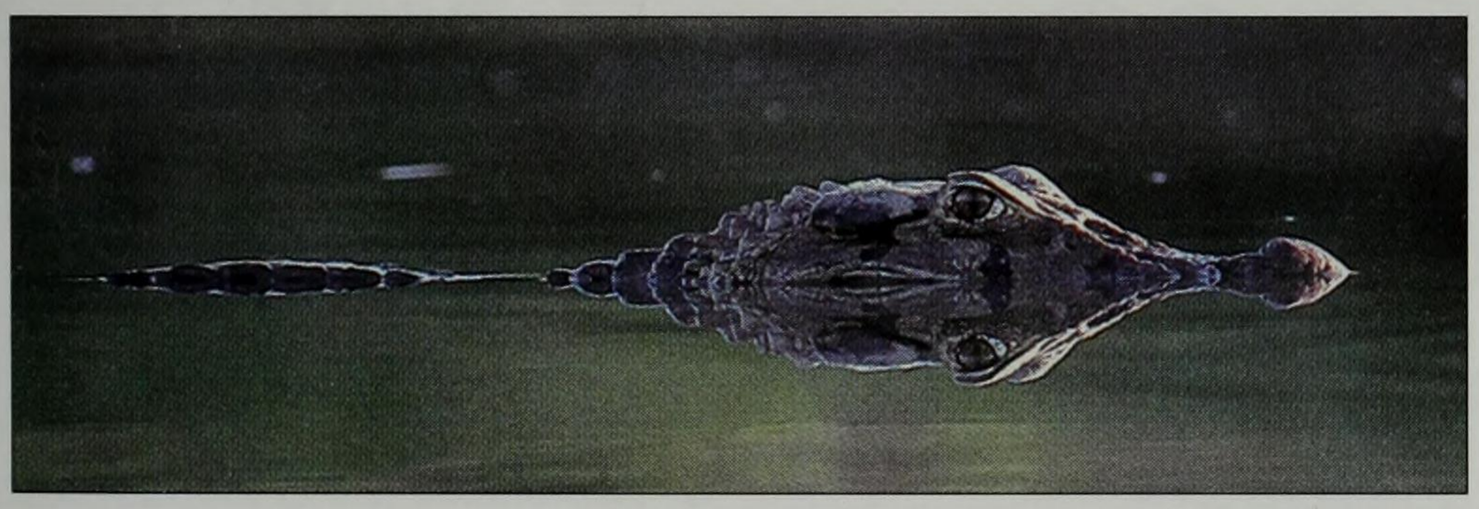
◁ Striking Prey

Venomous snakes may be front or rear fanged (fangs under and behind the eyes). This rattlesnake is a front-fanged pitviper; it locates its prey using heat-sensitive pits, then strikes rapidly, bringing its fangs forward to enter the prey.



▷ Heat Pits

Boas, pythons, and pit vipers have heat-sensitive pits situated on the face. The pits act together to pinpoint the precise direction and distance of prey.



◁ Black Caiman

This aggressive crocodilian is the largest caiman, growing up to 15ft (4.5m) long. It preys largely on fish and amphibians in the water. However, it will also eat reptiles, mammals, and birds that stray into its territory.

▷ African Python

African pythons prey on large mammals such as gazelle, domestic goats, and even humans. Prey is suffocated and then swallowed head first, a process that may take several hours. Even the gazelle's bones will eventually be digested by the python's stomach juices.

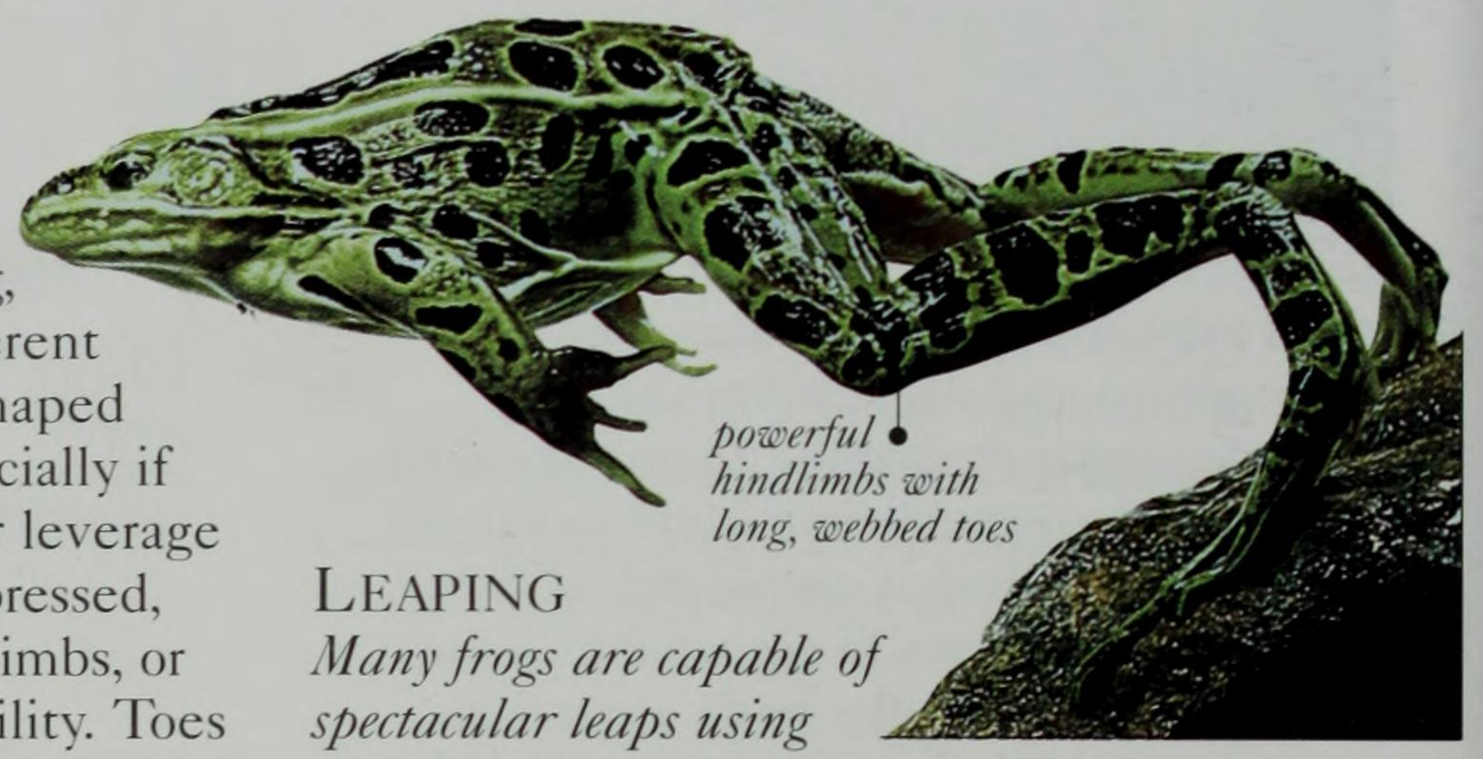


MOVEMENT AND ACTIVITY

THE ACTIVITY OF REPTILES and amphibians is limited mainly by cold, since they rely on environmental heat to raise their body temperature to a level where movement is possible. Species found in cooler temperate regions may be active for only part of the year. The main threat to tropical species is the dry season, when water, food, or prey is scarce.

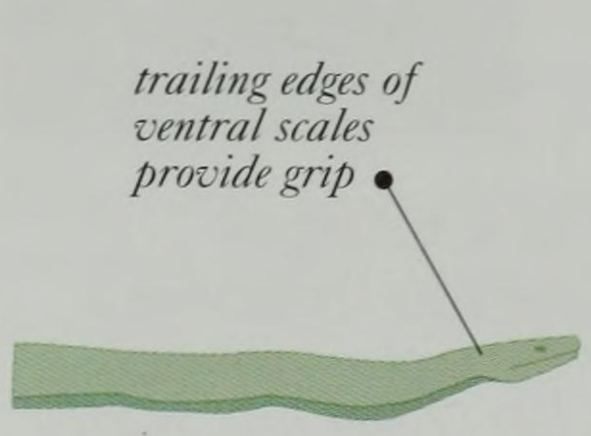
LOCOMOTION

Reptiles and amphibians move around in many ways: crawling, running, leaping, gliding, swimming, and burrowing. Each requires different adaptations. A pointed or shovel-shaped snout is useful for burrowing, especially if the tail bears a sharpened spike for leverage in smooth tunnels. A laterally compressed, paddle-shaped tail, flipperlike forelimbs, or webbed toes improve swimming ability. Toes may have adhesive pads, which can greatly increase climbing capabilities. Snakes use their complex systems of muscles to achieve different types of locomotion according to the terrain they have to traverse (see below).



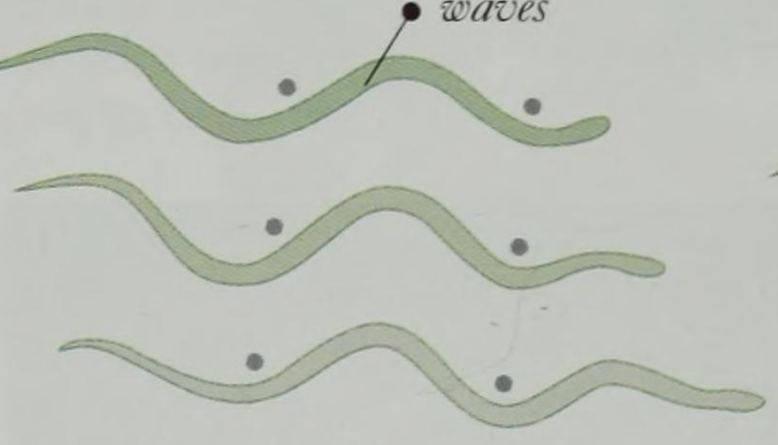
LEAPING

Many frogs are capable of spectacular leaps using their long, powerful hindlimbs. This Southern Leopard Frog takes a series of zigzag leaps toward water when approached by a predator.



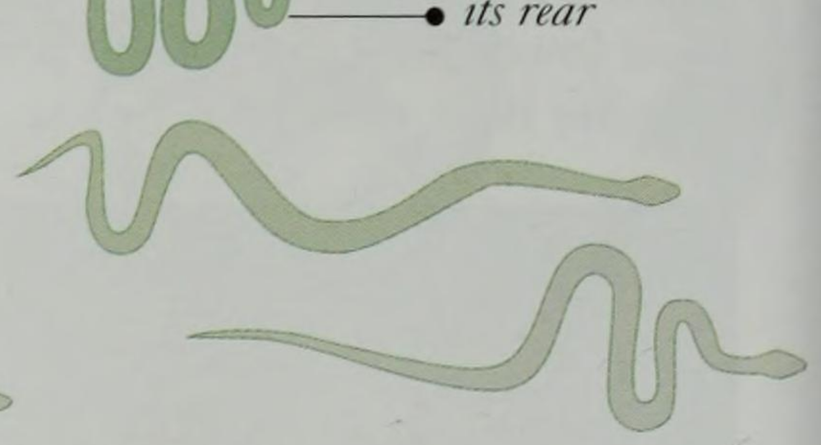
RECTILINEAR

Muscle contractions along the snake's body move it directly forward in a gliding motion.



SERPENTINE

The most common type of motion, the snake pushes its body against ground irregularities.

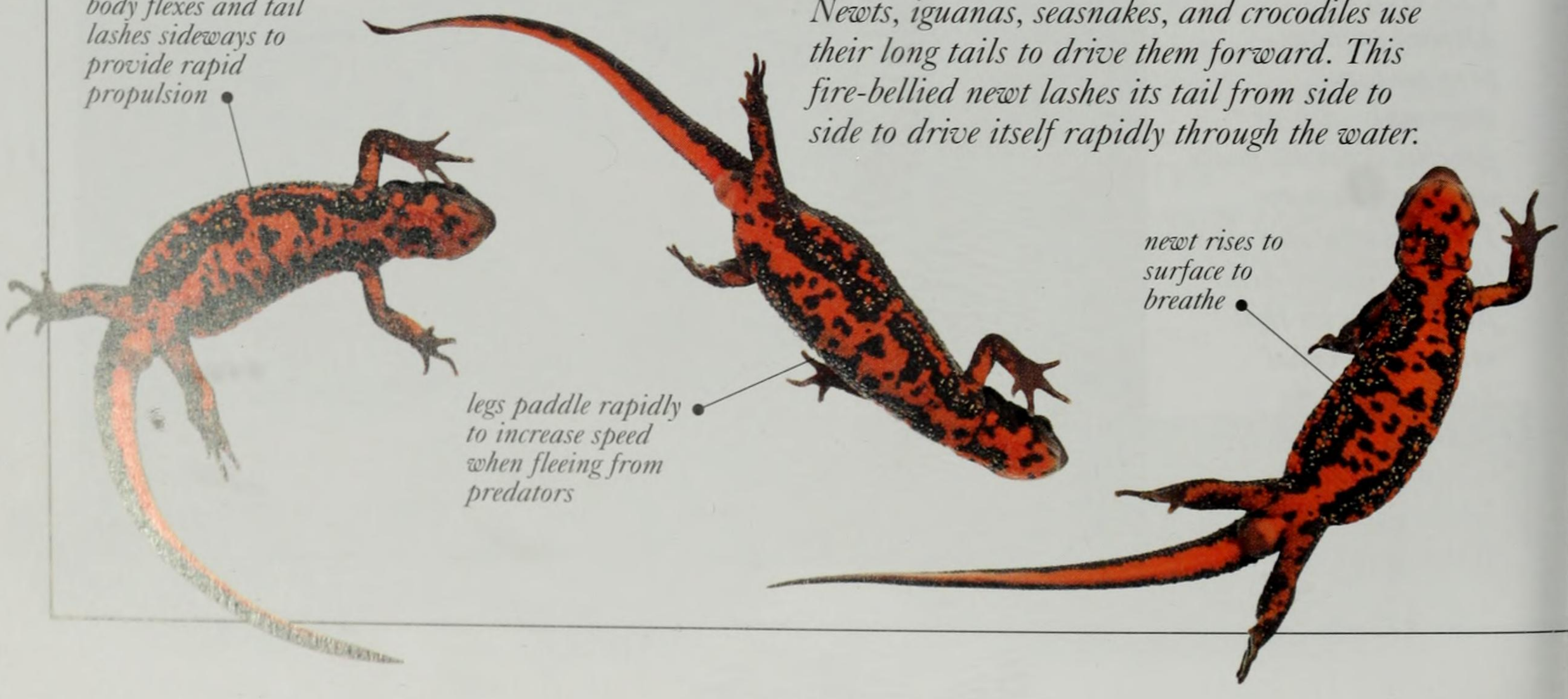


CONCERTINA

The snake bunches its muscles at the rear and extends its front in a continuous cycle of motion.

SWIMMING

Newts, iguanas, seasnakes, and crocodiles use their long tails to drive them forward. This fire-bellied newt lashes its tail from side to side to drive itself rapidly through the water.



Day or Night

To burrowing species, day and night are no different; they surface only when rain floods their burrows. Nonburrowing reptiles and amphibians are usually active when their prey is available – many tropical snakes hunt sleeping lizards or birds at night. Frogs and toads are also active mainly at night. For species living on the tropical rainforest floor, where a tiny fraction of ambient light may be available, day and night may be little different.



Nocturnal Species

The Common Leaf-tailed Gecko hides in trees during the day and emerges at night to hunt insects.

Basking

Diurnal reptiles, such as this European Eyed Lizard, bask to warm their bodies to active temperatures. If they bask too early, when ambient temperatures are still low, they risk attack by a predator.

lizard stays motionless and alert to danger

Activity Symbols

In this book, four symbols are used in the species profiles to indicate the time of day in which each species is active. Although most are active at night, those in temperate regions must be diurnal to remain active.

☼ **Diurnal**
Indicates those reptile and amphibian species that are active during the day.

☾ **Nocturnal**
Indicates those reptile and amphibian species that are active mainly at night.

◑ **Crepuscular**
Indicates those species that are most active at dusk or dawn.

○ **Any Time**
Indicates those species that may be active during the day or at night.



Seasonal Habits

Animals are active at times that are most beneficial to them, when food, prey, or mates are available and living conditions are not too extreme. In the tropics, the rainy season is often the time when most snakes are active, as are their prey. In temperate regions, reptiles and amphibians reproduce in the spring so that offspring have a chance to feed well before the oncoming winter.

Rattlesnakes Hibernating

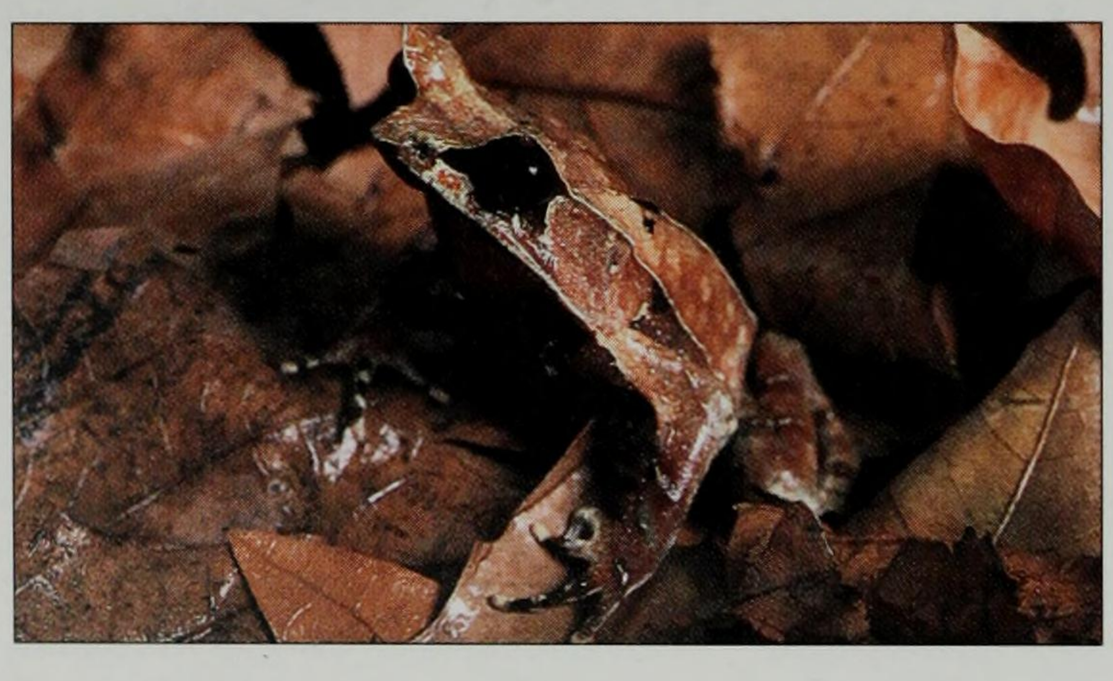
In temperate regions, reptiles and amphibians become inactive when temperatures drop below the level required for metabolic activity.

DEFENSE

AMPHIBIANS AND REPTILES use an array of strategies for defense, which may be passive or active. Passive defense involves camouflage to avoid detection or warning colors to deter predators. Active strategies range from rapid flight to the cobra's dramatic hooding. Puff Adders, Bullsnakes, and Russell's Vipers hiss very loudly; lizards may shed their tails; and frogs and toads can flatten or inflate their bodies to make them appear too large to eat, so deterring many predators.

COLOR

Many species have bright and startling colors to alert predators to toxins in the skin, as in the poison-dart frogs. Some frogs flash eyespots to confuse or frighten predators. Alternatively, coloration may be inconspicuous or cryptic to provide camouflage. Often such camouflage coloration is combined with adornments that enhance the effect, such as the curious snout protuberances of Madagascan Vinesnakes, which resemble leaf buds. Chameleons and some frogs can alter their color to match their immediate surroundings. Harmless snakes and frogs sometimes mimic dangerous species by adopting their warning patterns.



◁ CAMOUFLAGE
The brown coloration and angular shape of the Asian Leaf Frog makes it all but invisible among the decaying leaves on the forest floor.



△ WARNING
The Japanese Fire-bellied Newt has vivid red markings on its underside to warn predators that its skin contains distasteful secretions.



△ SUIT OF ARMOR
Reeve's Turtle of Southeast Asia (along with other advanced "straightneck" turtles) is able to fully retract its head into its shell for protection.

ARMOR

The most familiar armored reptiles are the turtles and tortoises, which have bony, two-piece shells. Box turtles have even evolved a means of retracting the legs and head and then closing the hinged plastron to form a box that protects them from being extracted. Many lizards that rely on retreating to a hole to avoid predators have sharply armored tails with which to block their retreats, and sand boas have strong keels on their tail scales for similar protection. Crocodilians, especially smaller species such as dwarf caimans and dwarf crocodiles, have armored osteoderms in their skin. Toxins in the skin of many amphibians may be seen as chemical armor.

Playing Dead

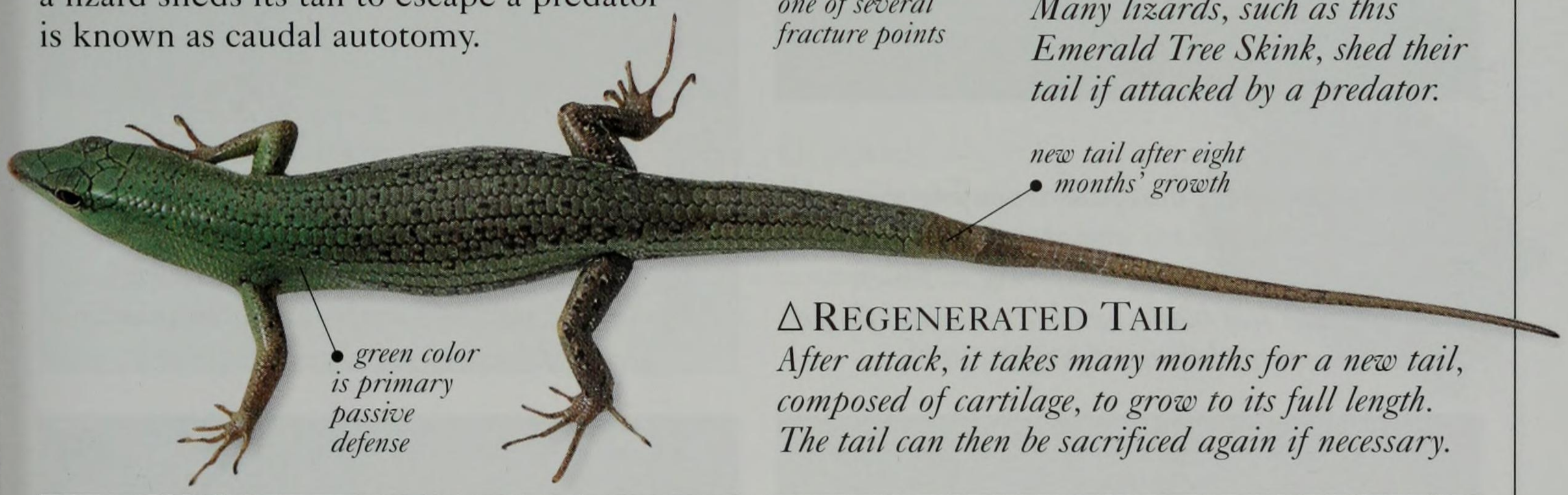
The process of playing dead is called thanatosis. Some newts play dead to avoid the attentions of short-sighted grass snakes. Hog-nose snakes, grass snakes, and the Rinkhals will also roll over and play dead, even to the point of rolling back again, mouth agape, if turned the right way up. Thanatosis is frequently accompanied by the release of the pungent cloacal contents to repulse the predator.



▷ Thanatosis
This grass snake is feigning death by rolling on its back with its tongue hanging limp. If the predator loses interest, the snake will make a hasty retreat.

Other Defenses

A wide range of unique defenses are employed by individual species. American Horned Toad Lizards rupture the blood vessels around the eyes and some West Indian boas bleed from the mouth in a process called autohemorrhagy. Either the blood tastes acrid to the predator or the sight is offputting. The process whereby a lizard sheds its tail to escape a predator is known as caudal autotomy.

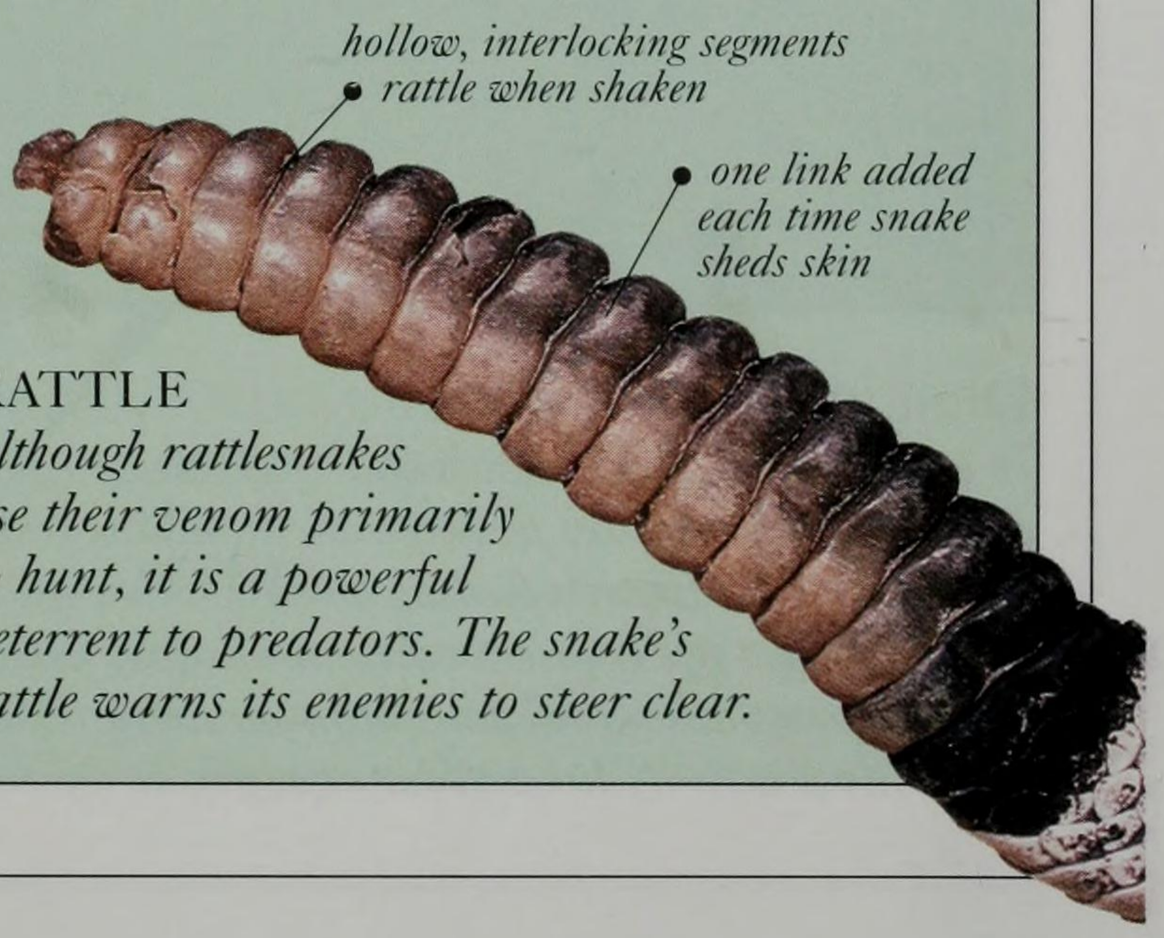


△ Shed Tail
Many lizards, such as this Emerald Tree Skink, shed their tail if attacked by a predator.

△ Regenerated Tail
After attack, it takes many months for a new tail, composed of cartilage, to grow to its full length. The tail can then be sacrificed again if necessary.

Venom for Defense

Although many snakes are venomous, the venom is used primarily for hunting. Many snakes will advertise their presence using an audible or visual signal and will bite in defense as a last resort. Spitting cobras, however, will expel a "shotgun scatter" of venom into the face of a perceived enemy. The spit causes intense pain, allowing the cobra time to escape. The only other reptiles with venom specifically for defense are the two American heloderm lizards.



Rattle
Although rattlesnakes use their venom primarily to hunt, it is a powerful deterrent to predators. The snake's rattle warns its enemies to steer clear.

Distribution and Habitat

The limiting factors influencing the distribution of amphibians are cold, salinity, aridity, and availability of freshwater. Their permeable skins make them vulnerable to desiccation in the sun or upon immersion in seawater. Reptiles are less restricted since their scaly skin prevents desiccation. They adapt well to most conditions but are excluded from the poles and mountain peaks.

Diverse Environments

Tropical rainforest and wetlands support the greatest range of amphibians and reptiles, but temperate forests, deserts, and grasslands are also home to a wide range of species. A few reptiles thrive in the sea or in mountainous areas. Many species have adapted to live, alongside man, in urban areas.

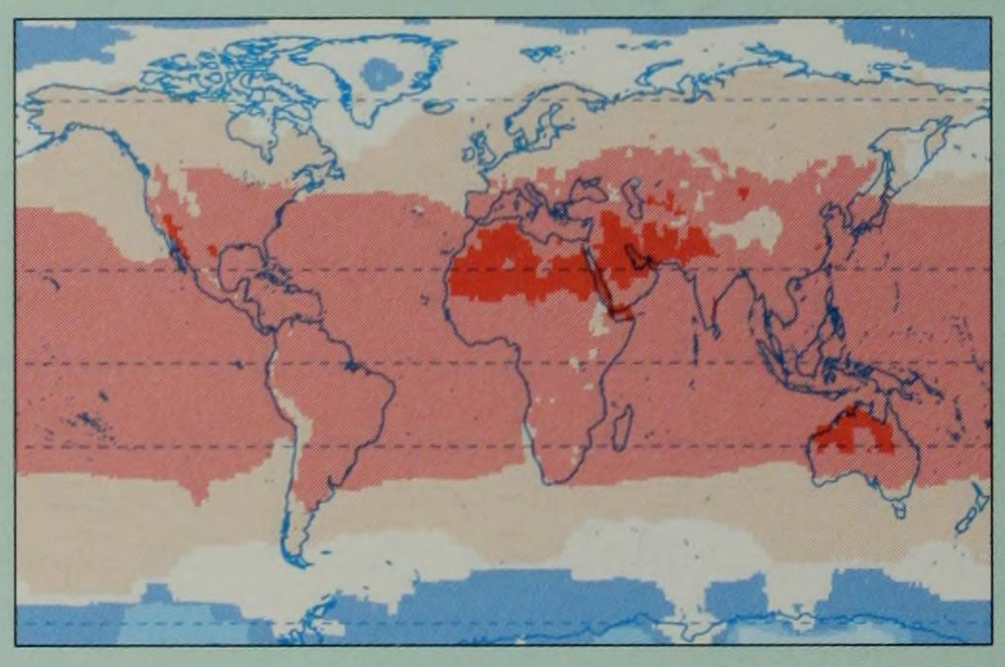


Grasslands

Savannas, pampas, and prairies can be diverse habitats for amphibians and reptiles, accommodating burrowing snakes, lumbering tortoises, small frogs on leaf blades, and large camouflaged vipers. The main threat is drought.

Distribution

The numbers of amphibian and reptile species and individuals are heavily dependent on temperature (although rainfall is also significant factor).



Temperature

This map shows the Earth's average temperatures. Reptile and amphibian populations are most diverse in hot, wet areas and smaller and less varied at high altitudes and towards the poles.



Deserts

In even the most inhospitable of deserts there are snakes feeding on lizards and lizards feeding on insects. Desert life requires adaptations for water conservation and movement on loose sand. Most activity takes place at night.

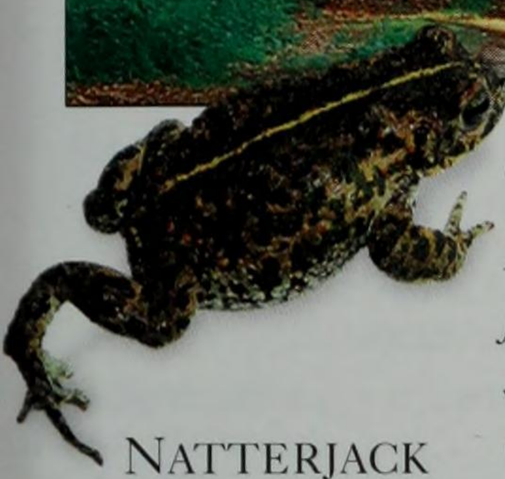
Web-footed Gecko



Wetlands

Many amphibians, and the reptiles that feed upon them, inhabit swamps, marshes, lakes, and rivers. Some caecilians never leave the water, while frogs return to breed. Large crocodiles, snapping turtles, and rare species like the Banded Water Cobra may be found in larger watercourses.





NATTERJACK TOAD

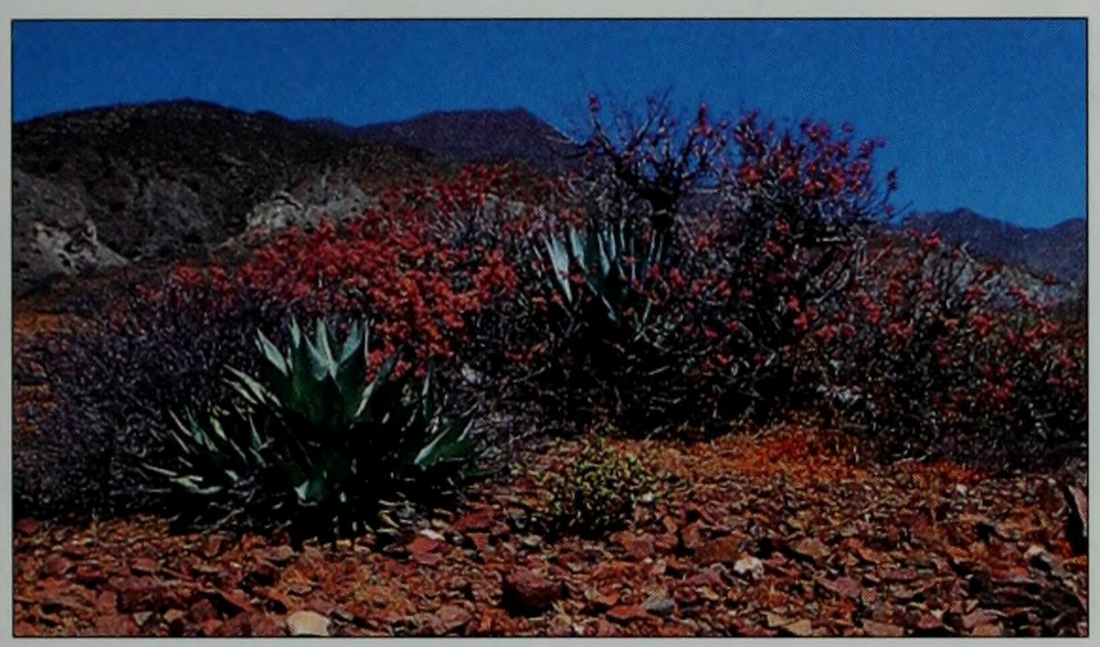
TEMPERATE FORESTS

Less diverse than tropical forests, temperate forests are still home to a large number of newts, salamanders, leaf-litter lizards, and snakes.



TROPICAL FORESTS

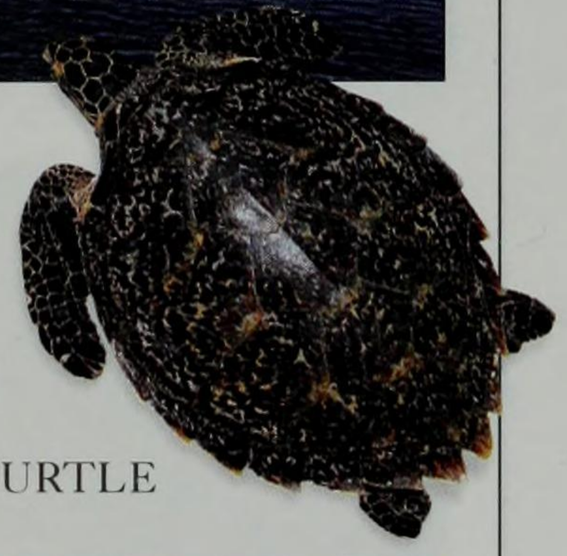
Tropical forest, in its various forms, contains the most varied collection of amphibians and reptiles, including many with specialized diets or habits. Species inhabit all levels, from the soil of the forest floor to the high sunlit canopy.



ISLANDS

Species diversity is often much lower on remote islands, especially among amphibians that do not colonize well. Island populations often exhibit traits toward giantism or dwarfism. Abnormally large numbers of single species may be found.

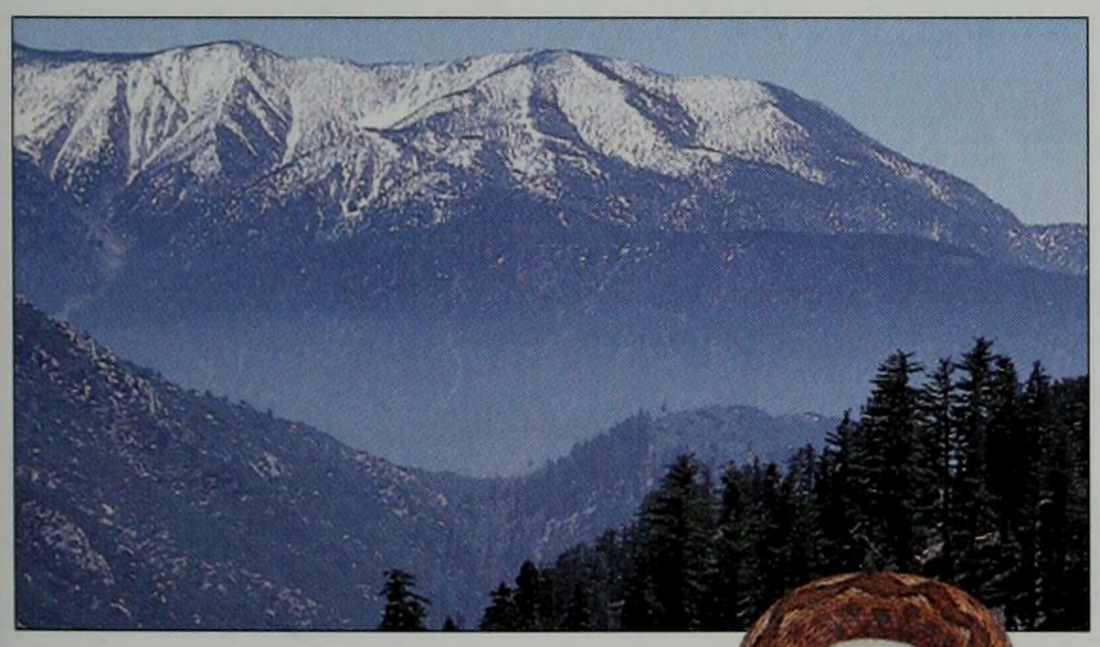




OCEANS

The oceans are home to a few reptiles, but amphibians cannot live in saltwater.

HAWKSBILL SEA TURTLE



MOUNTAINS

Lizards are common on the lower scree slopes. A few specialized snakes, such as the Nose-horned Viper, are found at relatively high elevations but are absent from the lowlands.



NOSE-HORNED VIPER



URBAN AND SUBURBAN AREAS

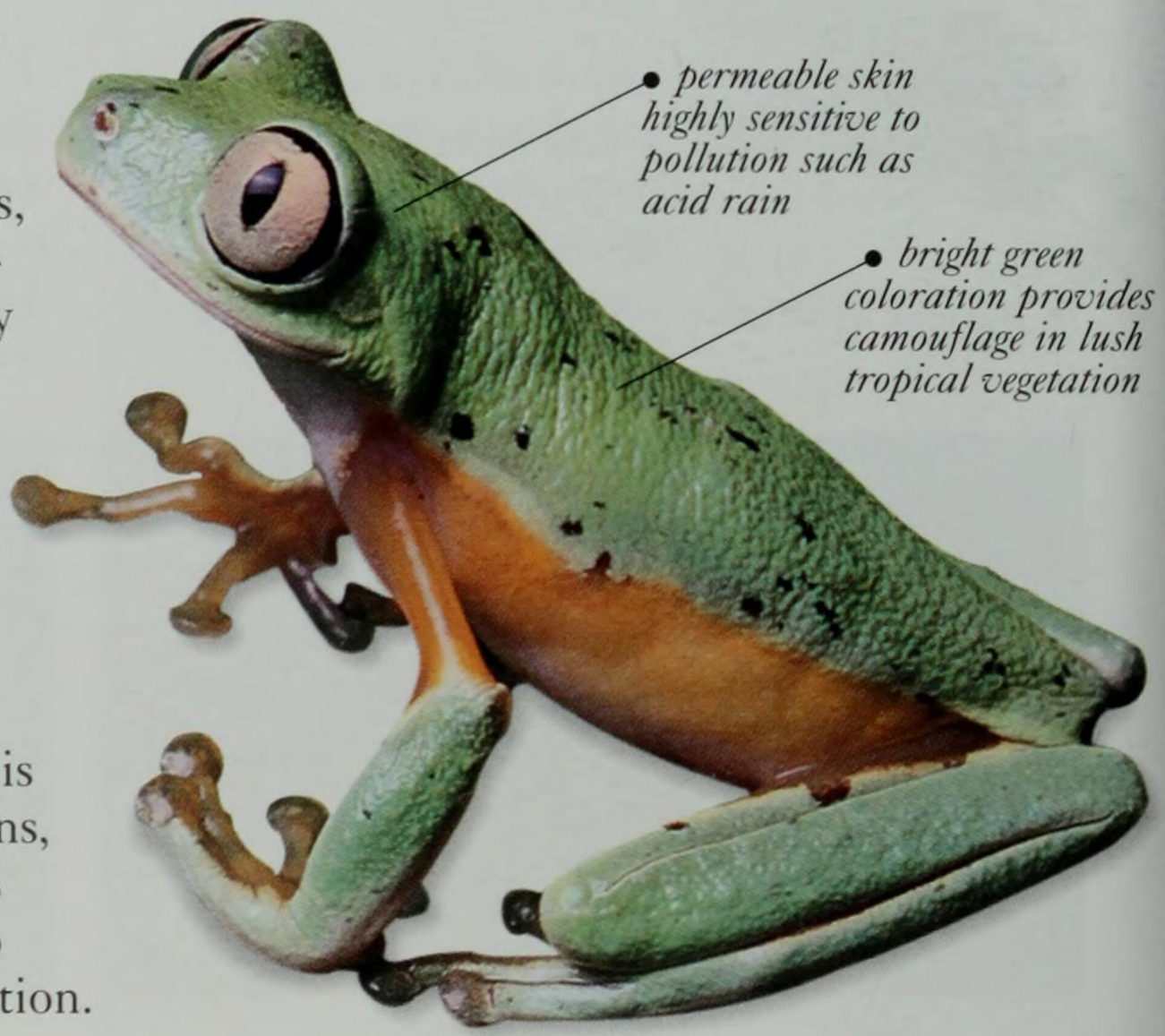
Many species can adjust to man-made environments and some even thrive. Amphibians inhabit ponds on reclaimed land and in gardens, and snakes often enter to hunt them. Large, venomous snakes are sometimes found even in some of the world's major capital cities.

CONSERVATION

REPTILES AND AMPHIBIANS are under considerable threat, and every year several species become extinct. Although they often go unnoticed, many species are important to the ecology of their habitats, acting as both prey and predators, and a decline in amphibian numbers may be a sign of environmental pollution. When reptiles and amphibians become extinct, other species soon follow, so it is vital that we take as much care over them as we do over more conspicuous animals.

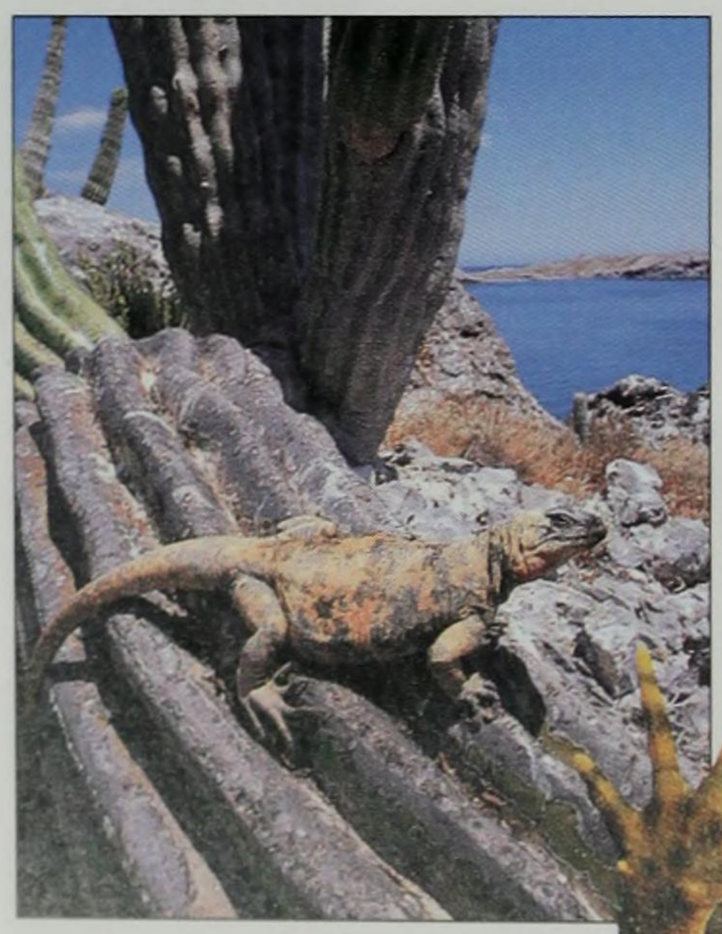
DECLINING POPULATIONS

Amphibians are disappearing from the world's ecosystems at an alarming rate. Apart from a number of high-profile species, such as the Costa Rican Golden Toad, population crashes have been recorded in many other species. In addition, the incidence of deformities within populations as far apart as Europe and Australia has increased noticeably in recent years. The reasons are not fully understood, but increased radiation due to ozone depletion, global warming, acid rain, and chemical pollution may all play their part. Habitat destruction is by far the greatest threat to reptile populations, although commercial exploitation (for skins and food) and introduced predators are also significant factors despite protective legislation.



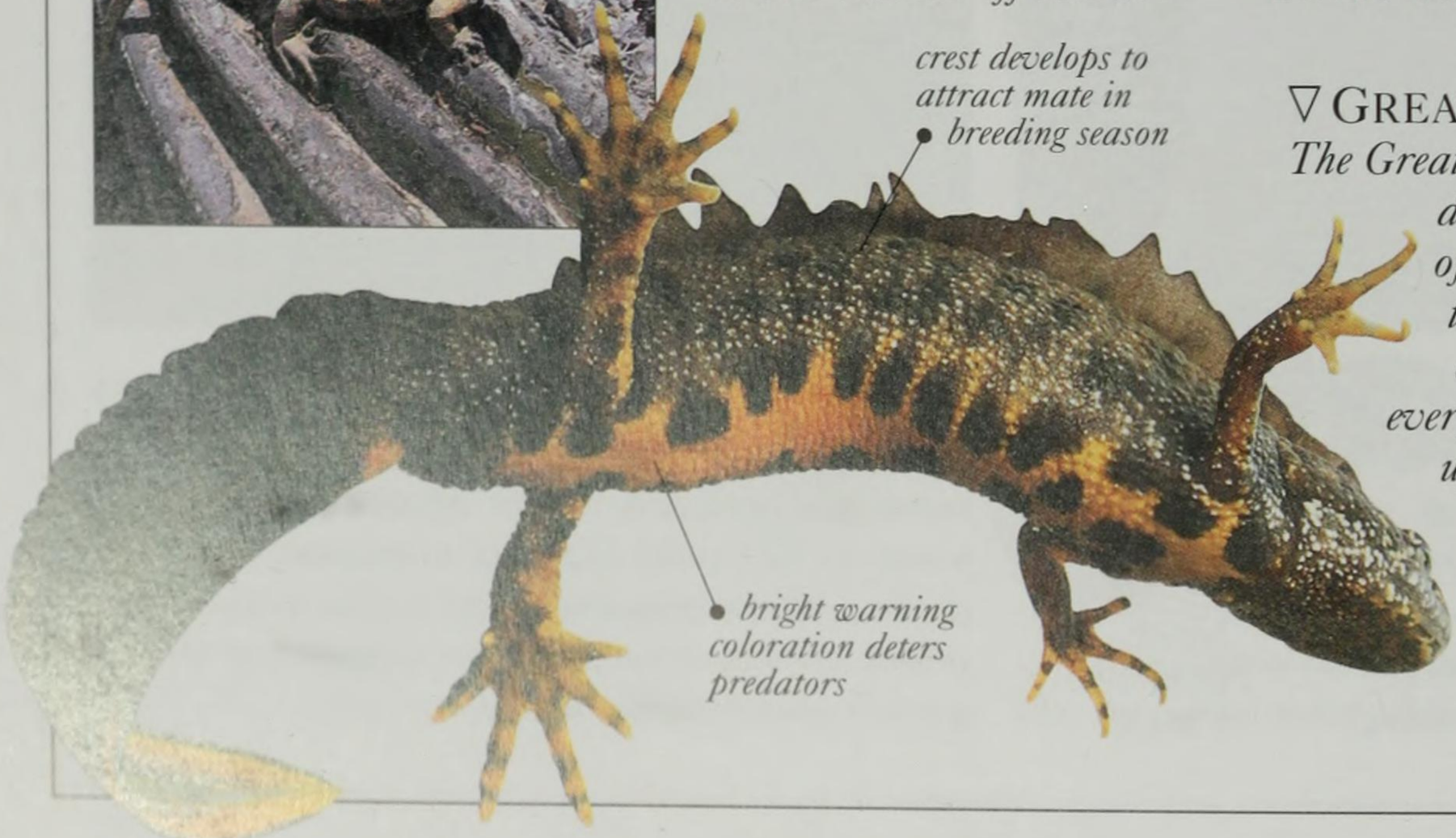
△ LEMUR FROG

The Lemur Frog is a leaf-breeding species from Central America. In recent years it has disappeared from areas where it was once common and is now almost extinct in Costa Rica, for instance. Especially worrying is the fact that there is no obvious reason for its decline, in one of the world's most pristine environments.



◁ CHUCKWALLA

Species that live on small islands, such as the Giant, or Pied, Chuckwalla, are particularly vulnerable to habitat destruction, illegal collection, and introduced predators like cats or rats. This protected species lives on two islands off Mexico.



▽ GREAT CRESTED NEWT

The Great Crested Newt is totally dependent on certain types of freshwater pond in order to breed. They must be deep enough to avoid drying up every year, but they should dry up occasionally so that fish and other predators cannot live in them. Ponds of this type are increasingly rare.

Commercial Exploitation

Hundreds of thousands of reptiles are sacrificed every year to feed the skin trade and the tourist industry. Despite some restrictions on the trade, tourist shops in Asia, for example, still offer ornaments made from dead reptiles, while upscale stores in prosperous countries continue to stock handbags, shoes, wallets, and other items made from reptile skins. Some of these products are from farmed crocodilians but wild populations are often exploited. Snakes and lizards are not commercially farmed, and there is only limited farming of turtles, so all products made from these species constitute a drain on wild populations, some of which have declined drastically in recent times.



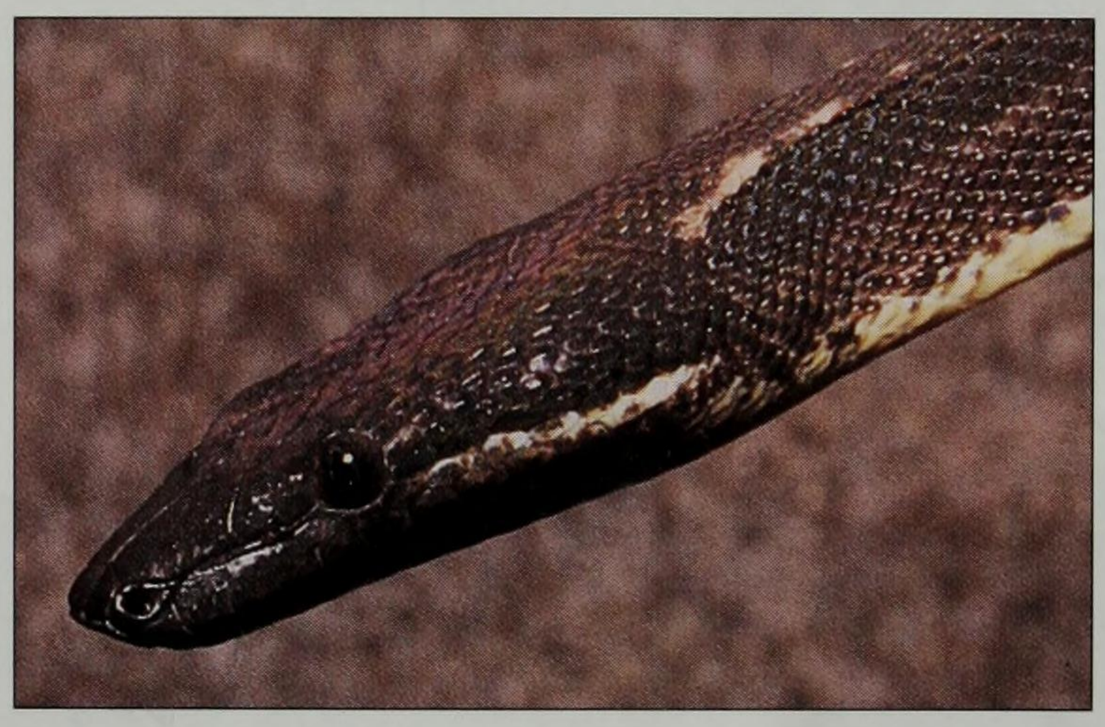
△ Crocodile Bag
This handbag was made from an endangered Dwarf Crocodile, complete with head and limbs. At least 13 of the 23 surviving species of crocodilian are considered at risk. Hunting for the skin trade is the main reason for their decline.

▽ Green Sea Turtles
Turtles are widely hunted for food and their eggs, which are often taken from slaughtered females before they are laid. Sea turtles return to the same beaches each year to nest, making them easy prey.



Conservation

Conservation is currently directed toward a relatively small number of high-profile species, but, as more people appreciate the need for biodiversity, the focus of attention is widening to include less conspicuous creatures. Recent conservation measures include legal protection from hunting or collection for the skin trade, and captive breeding. The Convention of International Trade in Endangered Species (CITES) has identified a large number of threatened species, and the trade in these species, or products made from them, is prohibited or strictly controlled. However, places where species diversity is greatest are often the same places where conservation measures are difficult to enforce, because of poverty, political instability, or difficulty in controlling poaching and habitat destruction.



Round Island Keel-scaled Boa
This unique snake has been saved from almost certain extinction. Its small island habitat was destroyed by introduced goats, which have now been eradicated. Numbers are being built up by a captive-breeding program to prepare the species for reintroduction to its native habitat.

STUDYING AND KEEPING

ALMOST ANYONE can study reptiles and amphibians. Depending on where you live, you may have to travel some way to find them or you may be lucky enough to have a few toads or lizards in your garden. Some people are content to make casual observations while out walking; others keep reptiles and amphibians in captivity. Whatever the situation, adopt a responsible approach.

STUDYING

Compared with mammals and birds, relatively little is known about the anatomy and behavior of many reptiles and amphibians; so even amateur herpetologists using inexpensive equipment can make important observations. Records such as sightings of local species, dates of breeding activities in ponds, and numbers present will make an interesting journal, especially if pictures are included. Surveys charting population numbers over a period of time are especially valuable. Joining an amateur society or a local wildlife group puts you in touch with other enthusiasts.



△ GARDEN POND
Even a small garden pond will encourage wildlife. An amphibian pond should not contain fish, which will eat eggs and larvae.

◁ SKETCHING
Sketches of colors and markings will help you identify species later and may even enable you to keep track of individuals, because many have unique patterns.



sketchpad may also be useful for notes



dial allows focus to be adjusted

△ BINOCULARS
Binoculars allow you to study the activities of reptiles and amphibians without disturbing them. Scan pond margins or openings in forests and look for tree-dwelling species where they occur.

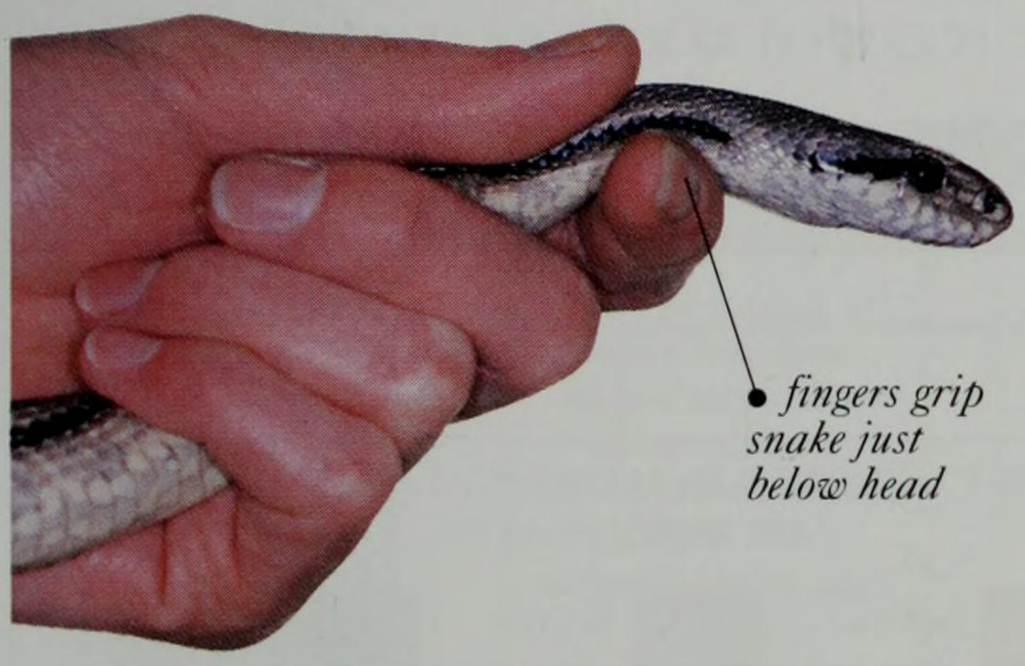


distinctive shell markings aid identification

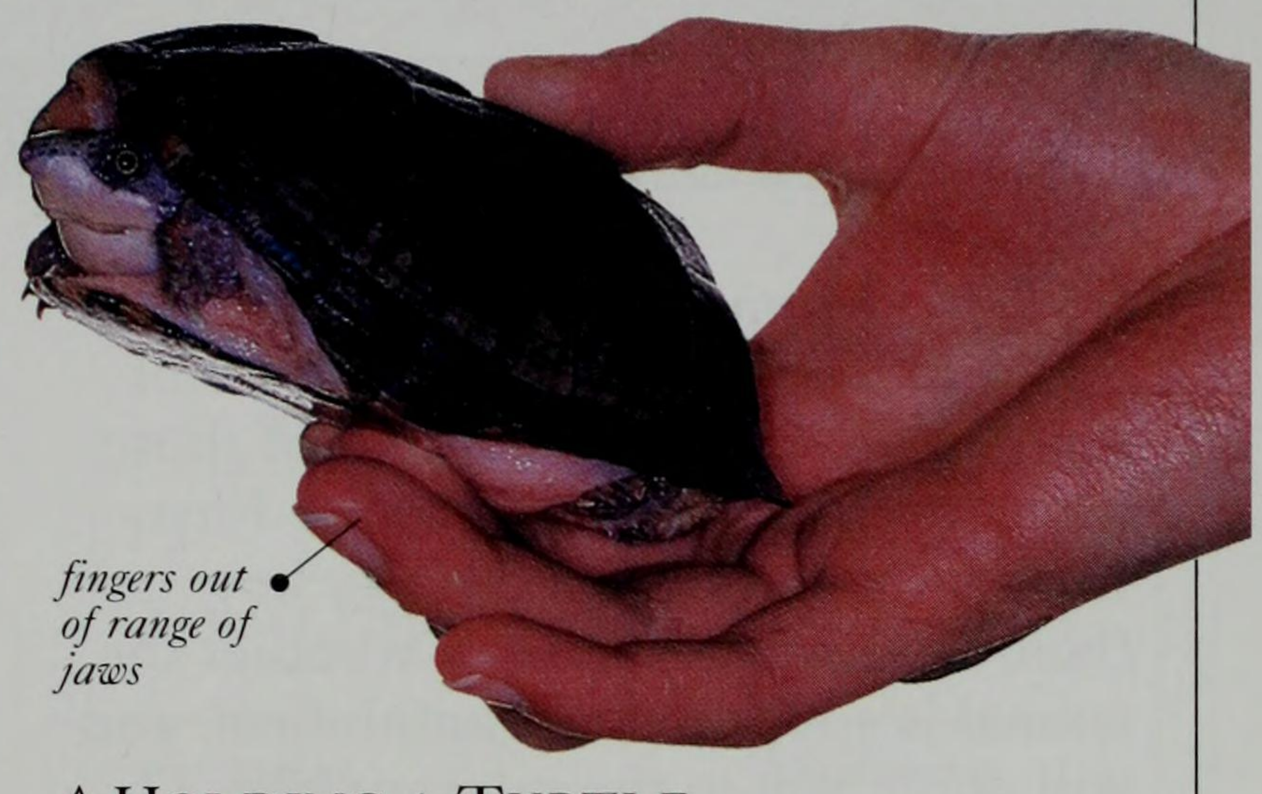
◁ PHOTOGRAPHY
A single-lens reflex camera is best for shots of reptiles and amphibians. A close-up or macro lens and a small flashgun are also useful. You may need a telephoto lens for nervous species and a wide-angle lens for habitat shots.

HANDLING

Only handle reptiles and amphibians when it is absolutely necessary, and only when you are sure that the species is harmless. Beware of lizards that may shed their tails, and turtles and snakes that may bite, even if they are not venomous. All species should be held firmly, and the body should be supported. A glass jar is useful for housing amphibians such as tadpoles temporarily, and a cotton bag can be used to hold snakes and lizards.



fingers grip snake just below head



fingers out of range of jaws

△ HOLDING A TURTLE

Some turtles, even small ones, can give a nasty bite. Hold them by the back of their shell and keep your fingers well away from the head.

◁ HANDLING A PET SNAKE

Hold a pet snake by gripping the front half of its body firmly – but not too tightly – and support the rest of its body in your other hand. Allow it to crawl through your hands if it wants to.



A SUITABLE HOME

Terraria (or vivaria) can be very simple or very elaborate. This one houses a colony of poison-dart frogs, whose very specific requirements include some living plants in which to hide and lay eggs.

KEEPING

Keeping reptiles and amphibians in captivity is a specialized field and you should not attempt it until you have researched the needs of the species in which you are interested. Wherever possible, buy captive-bred animals, which will adapt better to captive conditions and which will not strain natural populations. Light, temperature, and lighting are very important, and some species need a close simulation of their natural habitat if they are to remain healthy. Active species need much larger cages; some need a period of enforced hibernation in the winter. Many will thrive in captivity under the right conditions, however, and will even breed, giving further scope for the kind of observations you can make.

GUIDELINES FOR STUDY

Many reptiles and amphibians are legally protected, either locally, nationally, or internationally, because of their rarity. Others live in national parks and nature reserves, where the plants and animals are protected; the reptiles and amphibians can only be studied from a distance and so remain undisturbed. In all cases, avoid disrupting the animals and their habitats. If you are travelling in a remote place, tell someone where you are going and be particularly careful when looking for nocturnal species.

Identification Key

The key on pages 34 to 43 will help you identify the main families of reptiles and amphibians (most of those listed are featured in the book). First, work through the introductory key (below): this will establish whether the animal is a reptile or an amphibian, and will guide you to the relevant key. The families are identified mainly according to their physical features, but the geographical distribution of a family may be given when it will help with identification. With over 11,000 species of reptiles and amphibians in total, this key is necessarily generalized and is to be regarded as an approximate guide.

Amphibian or Reptile?

Body covered in soft, often moist, smooth or warty skin


Smooth


Warty

Amphibian

With legs

With a tail

Go to Key 1 (facing page)

Without a tail

Go to Key 2 (pp.36–37)

Without legs

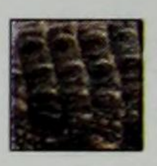
Caecilians (pp.209–210)


Mexican Caecilian (p.210)

Body covered in hard scales, scutes, or bony plates


Scales


Scutes


Bony plates

Reptile

With legs

2 front legs only

Bipes (p.103)
Bipedidae


Ajolote (p.103)

4 legs

With a shell

Turtles and Tortoises
Go to Key 5 (p.41)

Without a shell

Crocodilians, Tuatara, and Lizards
Go to Key 3 (pp.38–39)

Without legs

With movable eyelids

Legless Lizards
Go to Key 4 (p.40)

Without movable eyelids

Snakes and Snakelike Reptiles
Go to Key 6 (pp.42–43)

KEY 1: NEWTS AND SALAMANDERS

PLUMP OR SLENDER BODY WITH DISTINCT LIMBS

EXTERNAL GILLS



NO EXTERNAL GILLS

Mudpuppies, Olm
PROTEIDAE
(pp.197–98)



Mudpuppy (p.197)

Larval stages of other families, especially mole salamanders (Ambystomatidae, pp.205–206), salamanders, and newts (Salamandridae, pp.199–204)

LONG, THIN, EEL-LIKE BODY WITH BARELY VISIBLE LIMBS

2 SMALL LIMBS

Sirens
SIRENIDAE
(p.196)



Greater Siren (p.196)

4 SMALL LIMBS

Amphiumas
AMPHIUMIDAE
(p.199)



Three-toed Amphiuma (p.199)

LARGE FOLDS OF LOOSE SKIN

Giant salamanders and Hellbender
CRYPTOBRANCHIDAE
(p.197)



Hellbender (p.197)

PLUMP BODY

SLENDER BODY

N.W. USA, S.W. CANADA

N. AMERICA

EUROPE, N. AFRICA, W. ASIA

ASIA ONLY

AMERICAS, EUROPE

N. AMERICA, EUROPE, N. AFRICA, W. ASIA

Mole salamanders
AMBYSTOMATIDAE
(pp.205–206)



Tiger Salamander (p.205)

Fire Salamander
PART OF SALAMANDRIDAE
(p.202)



Fire Salamander (p.202)

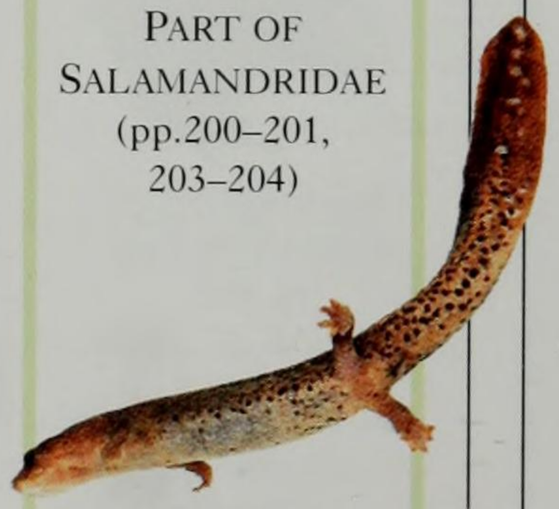
Asiatic salamanders
HYNOBIIDAE

Lungless salamanders
PLETHODONTIDAE
(pp.206–208)



Red-backed Salamander (p.207)

Brook salamanders, newts*
PART OF SALAMANDRIDAE
(pp.200–201, 203–204)



Hong Kong Warty Newt (p.201)

* Some male newts have crests in the breeding season.

Pacific salamanders
DICAMPTODONTIDAE
(p.198)



Pacific Salamander (p.198)

KEY 2: FROGS AND TOADS

EXCLUSIVELY AQUATIC, WITH LARGE, WEBBED HINDFEET

Clawed toads, pipa toads
PIPIDAE
(p.214)



African Clawed Toad
(p.214)

MOIST SKIN

SMOOTH SKIN

WARTY SKIN, BRIGHTLY COLORED UNDERSIDE

Fire-bellied toads
PART OF DISCOGLOSSIDAE
(p.213)



Yellow-bellied Toad
(p.213)

DRY, WARTY SKIN

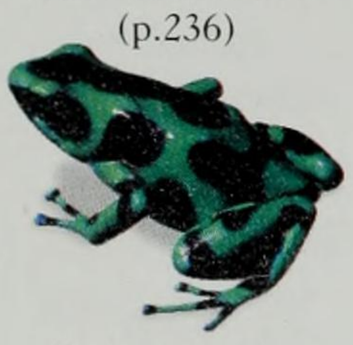
Most true toads
PART OF BUFONIDAE
(pp.222–26)
Short-headed toads
BRACHYCEPHALIDAE



Green Toad (p.225)

BRIGHT COLORATION, TOE PADS SMALL OR ABSENT

Poison-dart frogs
DENDROBATIDAE
(pp.232–34)
Harlequin toads
SOME BUFONIDAE
(p.222)
Mantella frogs
SOME RANIDAE
(p.236)



Black-and-green Poison-dart Frog
(p.232)

CONSPICUOUS SUCKERLIKE PADS ON TOES

SMALL, SEMI-TRANSPARENT BODY

Glass frogs
CENTROLENIDAE
(p.232)



La Palma Glass Frog
(p.232)

ROUNDED, COMPACT BODY AND SHORT HEAD

Go to facing page (top)

STREAMLINED BODY WITH LONG HEAD AND LARGE, POWERFUL HINDLIMBS

Go to facing page (center)

Ghost frogs
HELEOPHRYNIDAE (p.218)
Some Hylid treefrogs
PART OF HYLIDAE (pp.227–31)
Reed frogs, sedge frogs, bush frogs
HYPEROLIIDAE (pp.240–41)
Some Ranid frogs
PART OF RANIDAE (pp.234–39)
Rhacophorid treefrogs
RHACOPHORIDAE (pp.242–43)



Giant Tree Frog (p.230)

ROUNDED, COMPACT BODY AND SHORT HEAD
Continued from previous page

AMERICAS, ASIA, MADAGASCAR (MOSTLY SMALL WITH DULL COLORATION)

Narrow-mouthed toads
PART OF MICROHYLIDAE
(pp.244–45)



Malaysian Narrow-mouthed Toad (p.245)

AFRICA ONLY

Rain frogs
PART OF MICROHYLIDAE
(p.243)



Bushveld Rain Frog (p.243)

N. AMERICA, EUROPE, ASIA

Spadefoot toads
PART OF PELOBATIDAE
(pp.214–15)



Couch's Spadefoot Toad (p.215)

AUSTRALASIA ONLY

Myobatrachid frogs
MYOBATRACHIDAE
(pp.216–17)



Sign-bearing Froglet (p.216)

N.E. MEXICO, S.E. TEXAS

Mexican Burrowing Frog
RHINOPHRYNIDAE
(p.243)



Mexican Burrowing Frog (p.243)

STREAMLINED BODY WITH LONG HEAD AND LARGE, POWERFUL HINDLIMBS
Continued from previous page

AMERICAS ONLY

Leptodactylids
LEPTODACTYLIDAE
(pp.219–21)



Túngara Frog (p.219)

Some Ranid frogs
PART OF RANIDAE
(pp.234–39)



Agile Frog (p.238)

Some Hylid treefrogs
PART OF HYLIDAE
(pp.227–31)



Northern Cricket Frog (p.227)

Paradoxical frogs
PSEUDIDAE
(p.226)



Paradoxical Frog (p.226)

OTHER FROGS AND TOADS (DISTINGUISHING FEATURES LISTED IN THE KEY DO NOT APPLY)

Squeaker frogs and Hairy Frog
(Africa only)
ARTHROLEPTIDAE
(p.242)

Tailed Frog
ASCAPHIDAE
(p.211)

***Colostethus* species**
(C. and S. America)
PART OF DENDROBATIDAE

Midwife toads
PART OF DISCOGLOSSIDAE
(pp.212–13)

New Zealand frogs
(New Zealand only)
LEIOPELMATIDAE

Parsley Frog
(Europe only)
PART OF PELOBATIDAE
(p.216)

Mouth-brooding frogs
(extreme South America only)
RHINODERMATIDAE

Seychelles frogs
(Seychelles only)
SOOGLOSSIDAE (p.218)

KEY 3: CROCODILIANS, TUATARA, AND LIZARDS

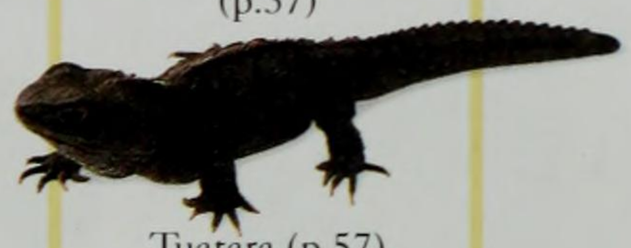
LARGE, STREAMLINED BODY; THICK, LEATHERY SKIN WITH BONY PLATES ON BACK; TOOTHLIKE SCALES ALONG TAIL; AND A PROMINENT SNOUT

→ CROCODILIANS

LIZARDLIKE WITH DORSAL CREST, FOUND ONLY ON ISLANDS OFF NEW ZEALAND

→ TUATARA

Tuatara
SPHENODONTIDAE
(p.57)



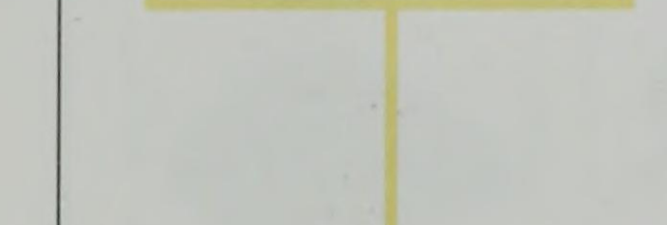
Tuatara (p.57)

USUALLY WITH 4 WELL-DEVELOPED LEGS, MOVABLE EYELIDS, A LONG TAIL, AND EXTERNAL EAR OPENINGS. NOTE: LIZARDS FORM A VERY DIVERSE GROUP AND VARY GREATLY IN APPEARANCE. WHILE MOST HAVE LEGS, SOME ARE SNAKELIKE, WITHOUT LIMBS
(FOR LEGLESS LIZARDS SEE KEY 4, P.40)

→ LIZARDS

BROAD SNOUT

Alligators, caimans
ALLIGATORIDAE
(pp.190–92)



American Alligator
(p.190)

NARROW SNOUT

Crocodiles
CROCODYLIDAE
(pp.193–95)



Nile Crocodile
(p.193)

VERY NARROW SNOUT

Ganges Gharial
GAVIALIDAE
(p.193)



Ganges Gharial
(p.193)

MANY SMALL, BEADLIKE SCALES

Go to facing page (top)

LARGE SCALES

Go to facing page (center)

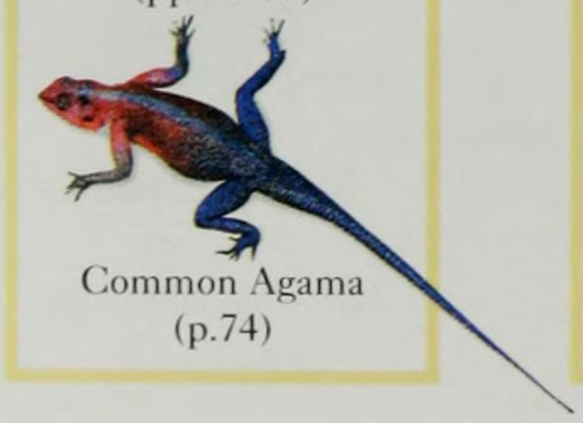
SMALL SCALES

Go to facing page (bottom)

"DRAGON" LIKE, WITH LARGE HEAD, LONG TAIL, OFTEN WITH CREST OR DEWLAP

E. EUROPE, AFRICA, ASIA, AUSTRALASIA

Agamid lizards
AGAMIDAE
(pp.74–77)



Common Agama
(p.74)

N. AND S. AMERICA, GALAPAGOS, FIJI

Iguanid lizards
IGUANIDAE
(pp.65–73)



Green Iguana (p.70)

MANY SMALL, BEADLIKE SCALES
Continued from previous page

LONG NECK, FORKED TONGUE, POWERFUL LIMBS AND TAIL

Monitor lizards
VARANIDAE
(pp.98–100)



Nile Monitor Lizard
(p.100)

NARROW, DEEP BODY, PREHENSILE TAIL, OFTEN HORNED OR CRESTED

Chameleons
CHAMAELEONIDAE
(pp.78–80)



Yemeni Veiled Chameleon (p.79)

BULKY ROUND BODY, SHORT LEGS, STOCKY TAIL

Beaded Lizard, Gila Monster
HELODERMATIDAE
(pp.96–97)



Gila Monster (p.97)

LARGE SCALES
Continued from previous page

RECTANGULAR SCALES ARRANGED IN ROWS

AFRICA ONLY

Girdled lizards, plated lizards
PART OF CORDYLIDAE
(p.87)



Giant Plated Lizard
(p.87)

AMERICAS ONLY

Alligator lizards
PART OF ANGUIDAE
(p.94)

Xenosaurs
XENOSAURIDAE
(p.95)



Chinese Crocodile Lizard (p.95)

AUSTRALASIA ONLY

Some skinks
PART OF SCINCIDAE
(pp.81–86)

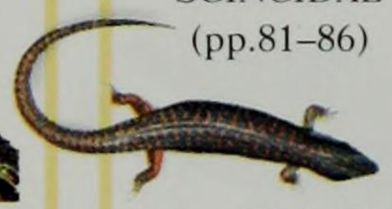


Slender Crocodile Skink (p.86)

SMOOTH, OVERLAPPING SCALES

SMALL HEAD, EYES, AND LIMBS

Most skinks
PART OF SCINCIDAE
(pp.81–86)



Schneider's Gold Skink (p.83)

LARGE HEAD, EYES, AND LIMBS

Wonder geckos
PART OF GEKKONIDAE
(p.63)



Wonder Gecko
(p.63)

SMALL SCALES
Continued from previous page

FLATTENED BODY AND TAIL

Night lizards
XANTUSIIDAE
(p.65)



Yellow-spotted Night Lizard (p.65)

CYLINDRICAL BODY AND TAIL

N. AND S. AMERICA

Teiid lizards
TEIIDAE
(pp.90–93)

EUROPE, AFRICA, ASIA

Sand lizards, wall lizards, and relatives
LACERTIDAE
(p.90)

SOFT SKIN WITH RANDOM LARGE SCALES, OFTEN PADS ON TOES, USUALLY LARGE EYES

Most geckos
PART OF GEKKONIDAE
(pp.58–64)



Common House Gecko (p.60)

KEY 4: LEGLESS LIZARDS

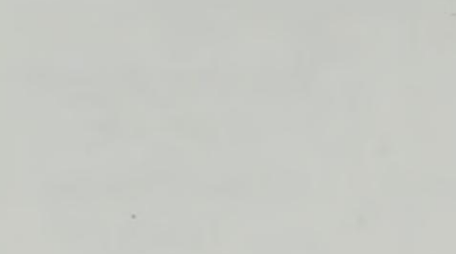
Legless lizards may be confused with snakes and other snakelike reptiles (see Key 6, p.42). Lizards may be distinguished by their usually movable eyelids.

SMOOTH, GLOSSY SCALES



AUSTRALASIA ONLY

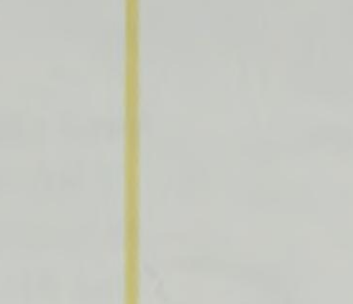
Snake-lizards
PYGOPODIDAE
(p.64)



Burton's Snake-lizard (p.64)

S.E. ASIA ONLY

Blind lizards
DIBAMIDAE
(p.87)



Nicobar Blind Lizard (p.87)

CALIFORNIA, BAJA CALIFORNIA (MEXICO)

American legless lizards
ANNIELLIDAE
(p.95)



Baja California Legless Lizard (p.95)

EUROPE, AFRICA

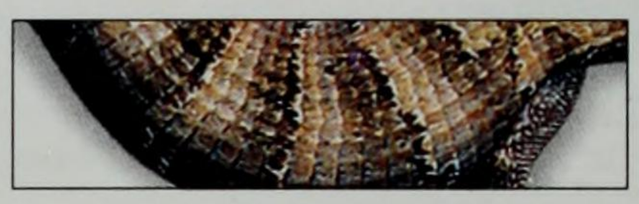
Some African and European skinks
PART OF SCINCIDAE
(pp.81–86)

Slow Worm
PART OF ANGUIDAE
(p.94)



Western Legless Skink (p.83)

KEELED SCALES, ARRANGED IN STRAIGHT LINES, GIVING RIBBED APPEARANCE



AFRICA ONLY

Grass lizards, seps lizards
PART OF CORDYLIDAE

N. AMERICA, EUROPE

Glass lizards and relatives
PART OF ANGUIDAE
(p.94)



Sheltopusik (p.94)

KEY 5: TURTLES AND TORTOISES

EXCLUSIVELY MARINE, WITH LIMBS MODIFIED INTO FLIPPERS

Sea turtles
CHELONIDAE
(p.49)
DERMOCHELIDAE
(p.48)



Green Sea Turtle (p.49)

HARD CARAPACE

SOFT CARAPACE

PADDLELIKE FORELIMBS, N. AUSTRALIA AND S. NEW GUINEA

Pig-snouted River Turtle
CARETTOCHELYIDAE
(p.47)



Pig-snouted River Turtle (p.47)

CLAWED FEET

Softshell turtles
TRIONYCHIDAE
(p.48)



Chinese Softshell Turtle (p.48)

DOMED CARAPACE

STREAMLINED CARAPACE, WEBBED OR PARTIALLY WEBBED FEET

ROUGH CARAPACE

MASSIVE HEAD UNABLE TO WITHDRAW INTO SHELL

HEAD WITHDRAWS STRAIGHT BACK INTO SHELL

HEAD AND LONG NECK WITHDRAW SIDEWAYS INTO SHELL

Big-headed Turtle
PLATYSTERNIDAE
(p.51)



Big-headed Turtle (p.51)

Pond turtles, sliders, some box turtles, and relatives
PART OF EMYDIDAE
(pp.51–52)

Pelomedusid side-necked turtles
PELOMEDUSIDAE
(pp.44–45)



Yellow-spotted River Turtle (p.45)

PARTIALLY WEBBED TOES, SMALL PLASTRON, AMERICAS ONLY

CLUB-SHAPED FEET

HINGED PLASTRON (SHUTS UP TIGHT WHEN ALARMED)

TRIANGULAR FLATTENED HEAD, FRILLED NECK

LARGE HEAD OFTEN CANNOT WITHDRAW INTO SHELL

Mud turtles, musk turtles
KINOSTERNIDAE
(p.46)



Yellow Mud Turtle (p.46)

Land tortoises
TESTUDINIDAE
(pp.53–56)



Leopard Tortoise (p.54)

Box turtles
PART OF EMYDIDAE
(pp.51–52)



Yellow-margined Box Turtle (p.51)

Matamata
PART OF CHELIDAE
(p.45)



Matamata (p.45)

Snapping turtles
CHELYDRIDAE
(p.50)



Alligator Snapping Turtle (p.50)

KEY 6: SNAKES AND SNAKELIKE REPTILES

Snakes may be confused with legless lizards (see Key 4, p.40). Lizards are identified by their usually movable eyelids.

WORMLIKE, WITH SCALES ARRANGED IN CLEAR RINGS AROUND BODY, EYES NOT VISIBLE

AMPHISBAENIANS

Amphisbaenians
AMPHISBAENIDAE
(pp.101–103)



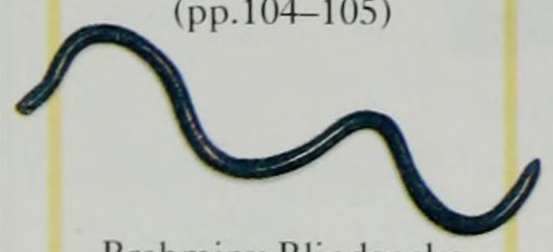
Red Worm-lizard
(p.101)

LONG, SLENDER BODY COVERED IN OVERLAPPING OR GRANULAR SCALES

SNAKES

SMALL, THREADLIKE BODY, OFTEN SILVER OR BROWN

Threadsnakes, blindsnakes
ANOMALEPIDAE
LEPTOTYPHLOPIDAE
TYPHLOPIDAE
(pp.104–105)



Brahminy Blindsnake
(p.104)

EXCLUSIVELY MARINE, WITH FLAT, PADDLE-SHAPED TAIL

Sea snakes, sea kraits
PART OF ELAPIDAE
(pp.156, 161, 162, 171)



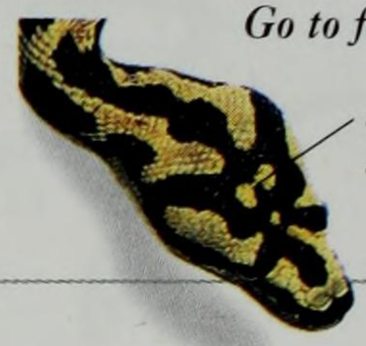
Yellow-lipped Sea Krait (p.162)

LARGE, PLATELIKE SCALES COVERING HEAD



SMALL, GRANULAR SCALES COVERING HEAD

Go to facing page



South American pipesnakes
ANILIIDAE (p.107)

Burrowing asps
ATRACTASPIDAE (p.155)

Round Island boas
BOLYERIDAE (p.108)

Colubrids
COLUBRIDAE (pp.125–55)

Cobras, coralsnakes, mambas, some sea snakes, and relatives
ELAPIDAE (pp.156–74)



King Cobra (p.169)

Neotropical Sunbeam Snake
LOXOCEMIDAE (p.106)

Some pythons
PART OF PYTHONIDAE (pp.117–24)

Asian pipesnakes, shieldtail snakes
UROPELTIDAE (p.107)

Some vipers
PART OF VIPERIDAE (pp.175–89)

Asian sunbeam snakes
XENOPELTIDAE (p.106)

SMALL, GRANULAR SCALES COVERING HEAD
Continued from previous page

GRANULAR SCALES ALSO ON BODY

Filesnakes
ACROCHORDIDAE
(pp.124–25)



Arafura Filesnake (p.124)

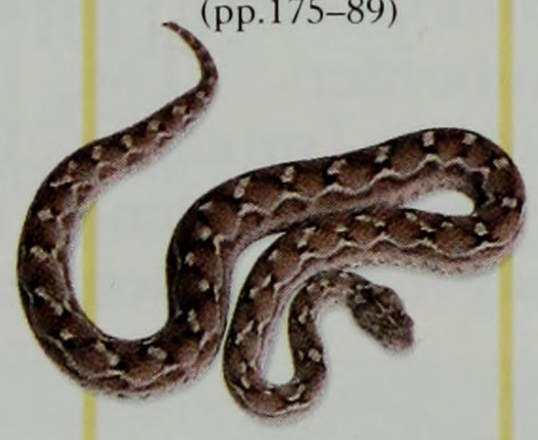
OVERLAPPING SCALES ON BODY

HEAT PITS



NO HEAT PITS

Most vipers
PART OF VIPERIDAE
(pp.175–89)



East African Carpet Viper (p.186)

VESTIGIAL LIMBS



Some boas
PART OF BOIDAE
(pp.109–16)

Some pythons
PART OF PYTHONIDAE
(pp.117–24)

Dwarf boas, woodsnakes
TROPIDOPHEIDAE
(p.108)



Cuban Dwarf Boa (p.108)

PITS BORDER MOUTH

Some pythons
PART OF PYTHONIDAE
(pp.117–24)

Some boas
PART OF BOIDAE
(pp.109–16)



Green Tree Python (p.121)

SINGLE PAIR OF PITS BETWEEN NOSTRILS, EYES, AND MOUTH

RATTLE AT TIP OF TAIL

Rattlesnakes
PART OF VIPERIDAE
(pp.175–89)



Western Diamondback Rattlesnake (p.183)

NO RATTLE

Some pitvipers
PART OF VIPERIDAE
(pp.175–89)



Malayan Pitviper (p.182)

REPTILES

TURTLES AND TORTOISES

THERE ARE MORE than 270 living species of turtles and tortoises, which are found in terrestrial, freshwater, and marine habitats, and in both temperate and tropical regions. The term "turtle" usually refers to a freshwater or marine species, while "tortoise" is normally reserved for a terrestrial species. "Terrapin" is a colloquial name for a freshwater turtle.

Turtles and tortoises belong to the order Testudines (or Chelonia), which is divided into two suborders. The primitive sideneck turtles (suborder Pleurodira) cannot fully retract their long necks, so when at rest they must lay their heads sideways along the inside of their shells. There are approximately 70 species of sideneck turtle, all living in freshwater. The more advanced straight-neck turtles (suborder Cryptodira) are a much larger group that live on land and in fresh- and seawater. They are able to withdraw their heads completely into their shells – the neck bending vertically in an S-shaped curve.

Tortoises and turtles range greatly in size, from the tiny Speckled Padloper (*Homopus signatus*), 2½–3¾in (6–9.5cm) long, to the massive Leatherback Sea Turtle (*Dermochelys coriacea*, p.48), which can reach up to 6ft (1.8m) in length.

Family PELOMEDUSIDAE	Species *Pelomedusa subrufa*	Status Common

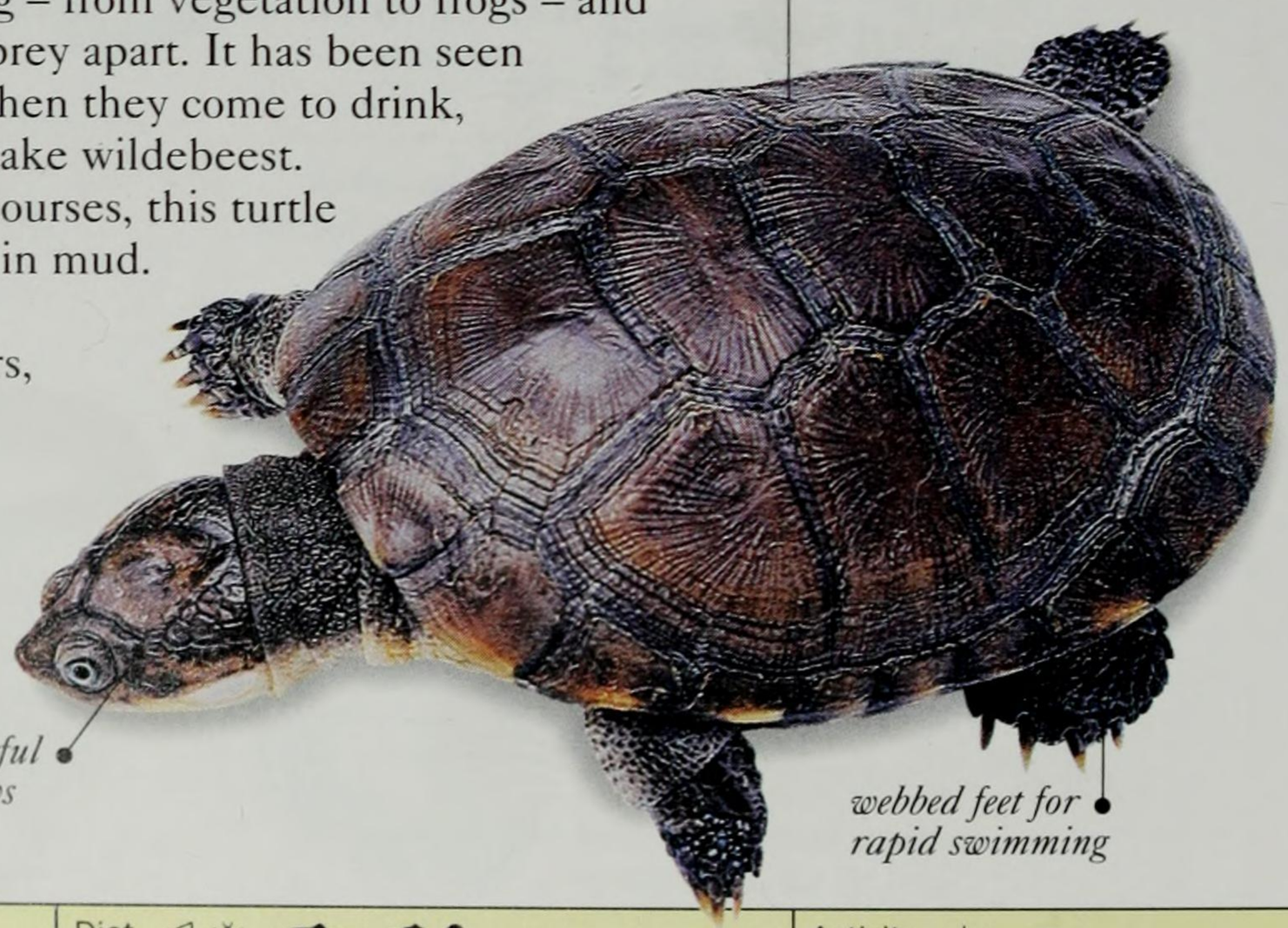
AFRICAN HELMETED TURTLE



AFRICA, MIDDLE EAST

Also known as the Marsh Terrapin, this sideneck turtle is fairly uniformly patterned olive-green or brown above, sometimes with black suturing on the scutes. It also has two small tubercles under its chin and musk glands in the sides of the carapace. Unlike African black turtles (*Pelusios* species), which are its closest relatives, the African Helmeted Turtle cannot close the front of its plastron to protect its head since it lacks the necessary hinge. A voracious feeder, it will eat almost anything – from vegetation to frogs – and fine claws on its toes help it rip prey apart. It has been seen capturing and drowning doves when they come to drink, in the same way that crocodiles take wildebeest. Often living in temporary watercourses, this turtle spends the dry season burrowed in mud.

- **OCCURRENCE** Africa, Madagascar, and Yemen. In rivers, lakes, and pools.
- **REPRODUCTION** Lays 10–40 eggs.
- **SIMILAR SPECIES** African black turtles (*Pelusios* species).



Length 12–13in (30–32cm)	Diet	Activity

Family PELOMEDUSIDAE	Species *Podocnemis unifilis*	Status Endangered

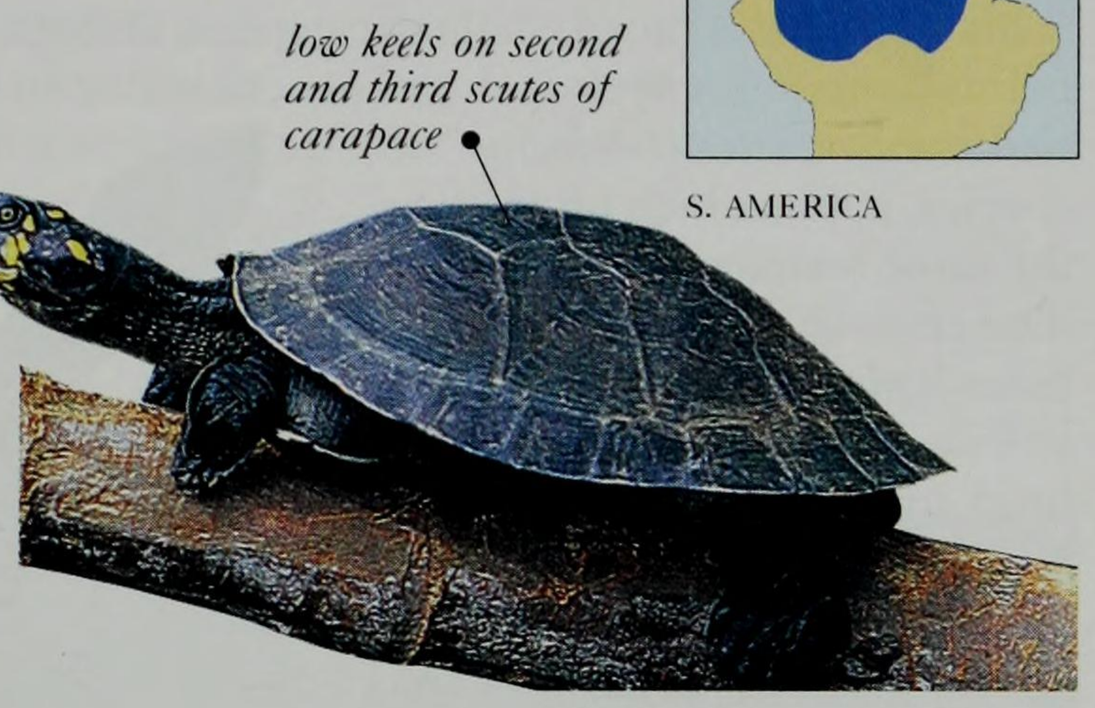
YELLOW-SPOTTED RIVER TURTLE

One of the larger South American river turtles, this species can be recognized by its black or brown oval carapace, which has low keels on the second and third scutes. Yellow spots on the side of the head – most evident in juveniles (shown here) – give the species its common name. Females can be twice the size of males.

- **OCCURRENCE** Amazon Basin, South America. In tributaries and large lakes.
- **REPRODUCTION** Lays 4–35 eggs.
- **SIMILAR SPECIES** Arrau Sideneck Turtle (*Podocnemis expansa*).



S. AMERICA



Length 13–25½in (33–65cm)	Diet	Activity

Family CHELIDAE	Species *Chelodina longicollis*	Status Common

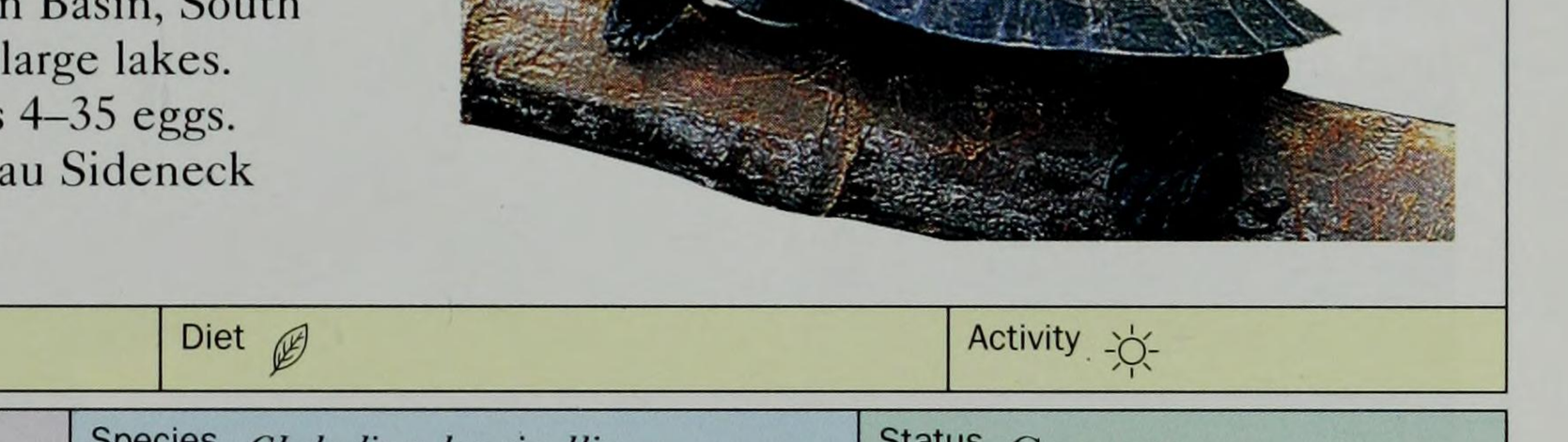
COMMON SNAKENECK TURTLE

An extremely long neck is the distinctive feature of this species. It also has a broad, flattened, brown carapace with black-edged scutes. The turtle may stand on the bottom of a waterway with its head at the surface, watching for predators.

- **OCCURRENCE** E. Australia. In slow-moving rivers, streams, swamps, and lagoons.
- **REPRODUCTION** Lays 2–10 eggs.
- **SIMILAR SPECIES** New Guinea Snakeneck Turtle (*Chelodina novaeguineae*).



AUSTRALIA



Length 8–10in (20–25cm)	Diet	Activity

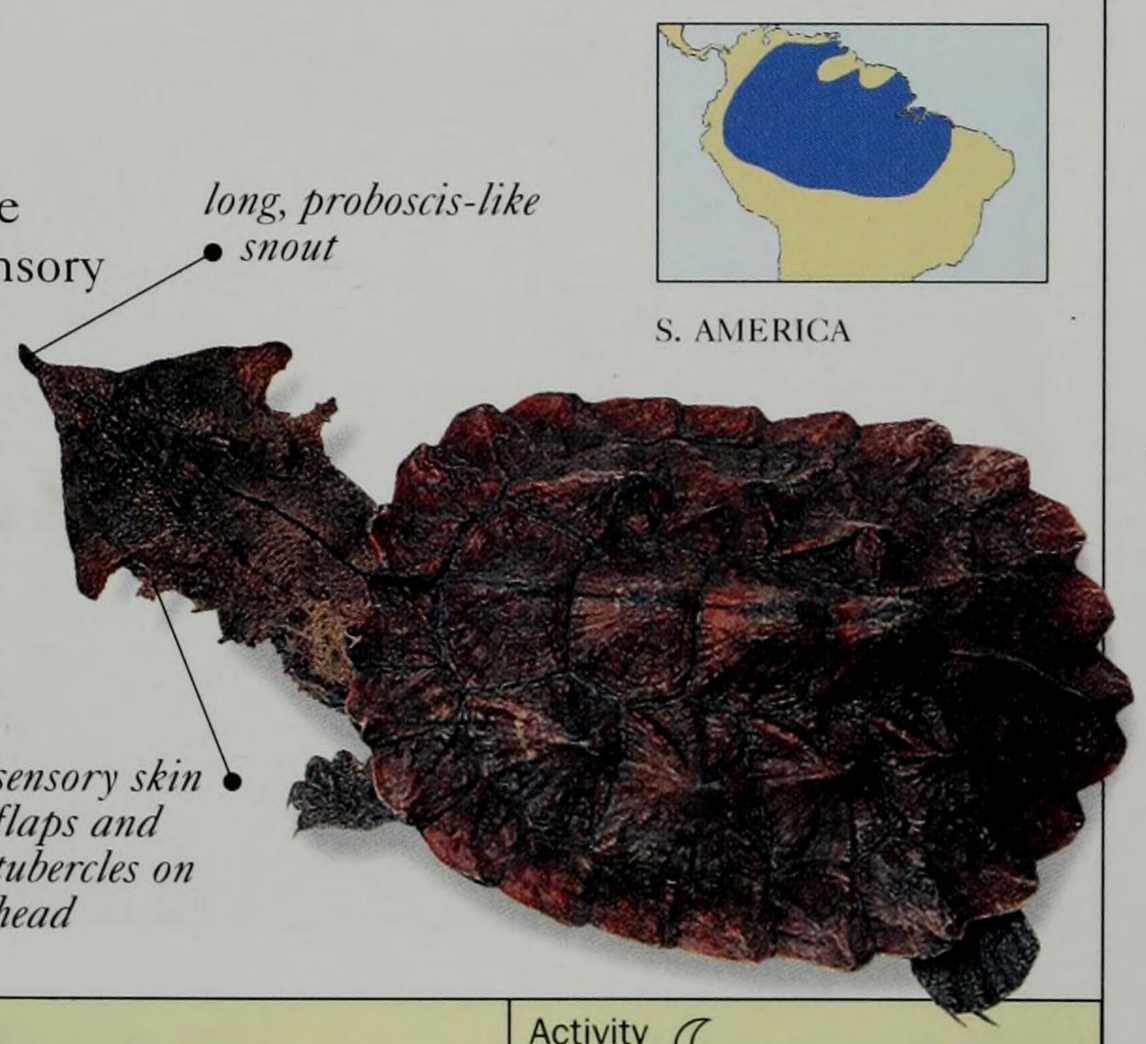
Family CHELIDAE	Species *Chelus fimbriatus*	Status Locally common

MATAMATA

This sideneck turtle is unlike any other. It has a broad, three-keeled, olive-brown carapace, and the long, thickened neck and triangular head have sensory fringes and skin flaps. The eyes are small, the external eardrums are large, and the snout terminates in a fine proboscis for breathing from the water surface. The Matamata rarely ventures onto land and never basks. It lives on the bottom of turbid waterways, where it captures its prey by stealth and by opening its wide mouth suddenly, which causes a rapid in-rush of water and fish.

- **OCCURRENCE** N. South America. In slow-moving creeks, oxbow lakes, and ponds.
- **REPRODUCTION** Lays 12–28 eggs.

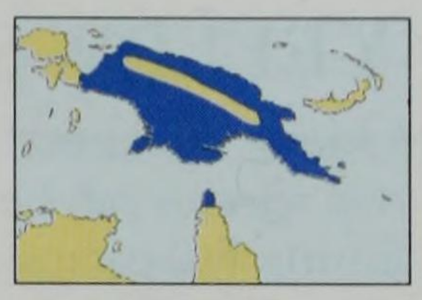
S. AMERICA



Length 12–16in (30–40cm)	Diet	Activity

Family CHELIDAE	Species *Emydura subglobosa*	Status Common

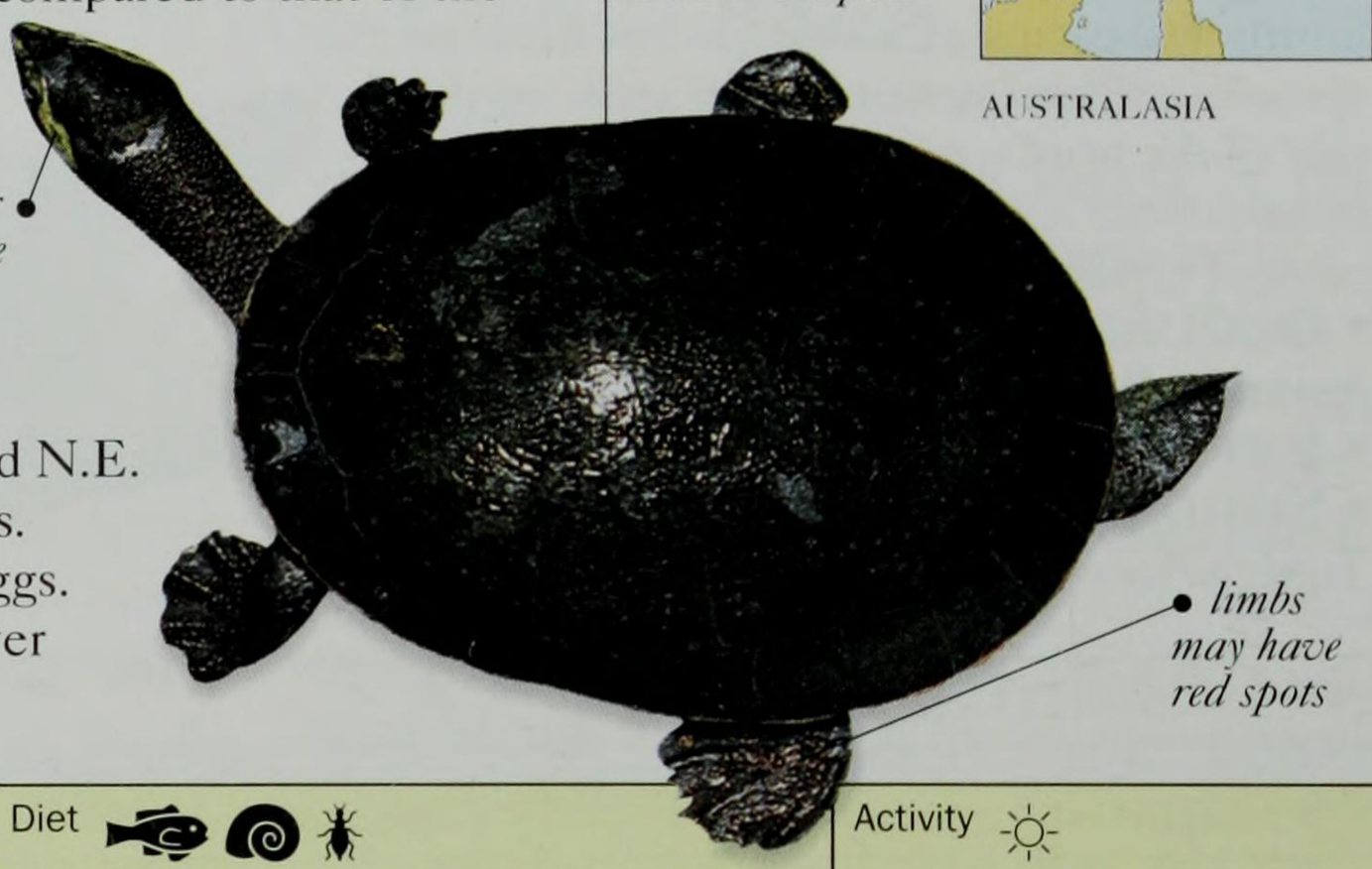
RED-BELLIED SHORTNECK TURTLE



AUSTRALASIA

This turtle has a broad, shallow carapace, smooth head, and pointed snout. Its neck is short only compared to that of the snakeneck turtles (*Chelodina* species, p.45), which often share the same watercourses. The crimson plastron fades with age. There are yellow or red stripes on the head and red spots on the limbs.

- **OCCURRENCE** New Guinea and N.E. Australia. In rivers, lakes, and lagoons.
- **REPRODUCTION** Lays 5–11 eggs.
- **SIMILAR SPECIES** Krefft's River Turtle (*Emydura krefftii*).



Length 8–10in (20–25cm)	Diet	Activity

Family KINOSTERNIDAE	Species *Kinosternon flavescens*	Status Common

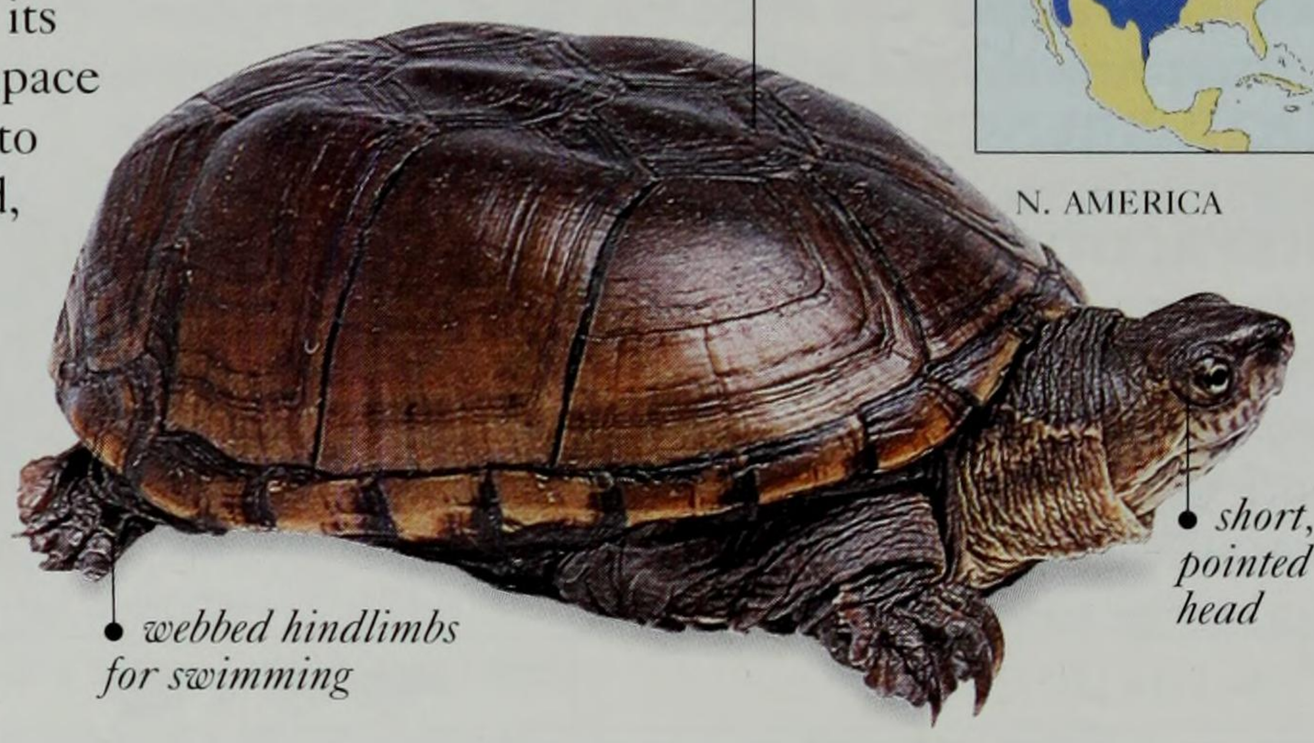
YELLOW MUD TURTLE

A yellow throat gives this mud turtle its common name. The olive-brown carapace is low, flat, and oval, with dark edges to each scute. The small head is pointed, with two tubercles under the chin.

- **OCCURRENCE** S. North America. In shallow, slow-moving water in grassland.
- **REPRODUCTION** Lays 1–9 eggs.
- **SIMILAR SPECIES** Eastern Mud Turtle (*Kinosternon subrubrum*).



N. AMERICA



Length 4¾–6¼in (12–16cm)	Diet	Activity

Family KINOSTERNIDAE	Species *Kinosternon oderatum*	Status Common

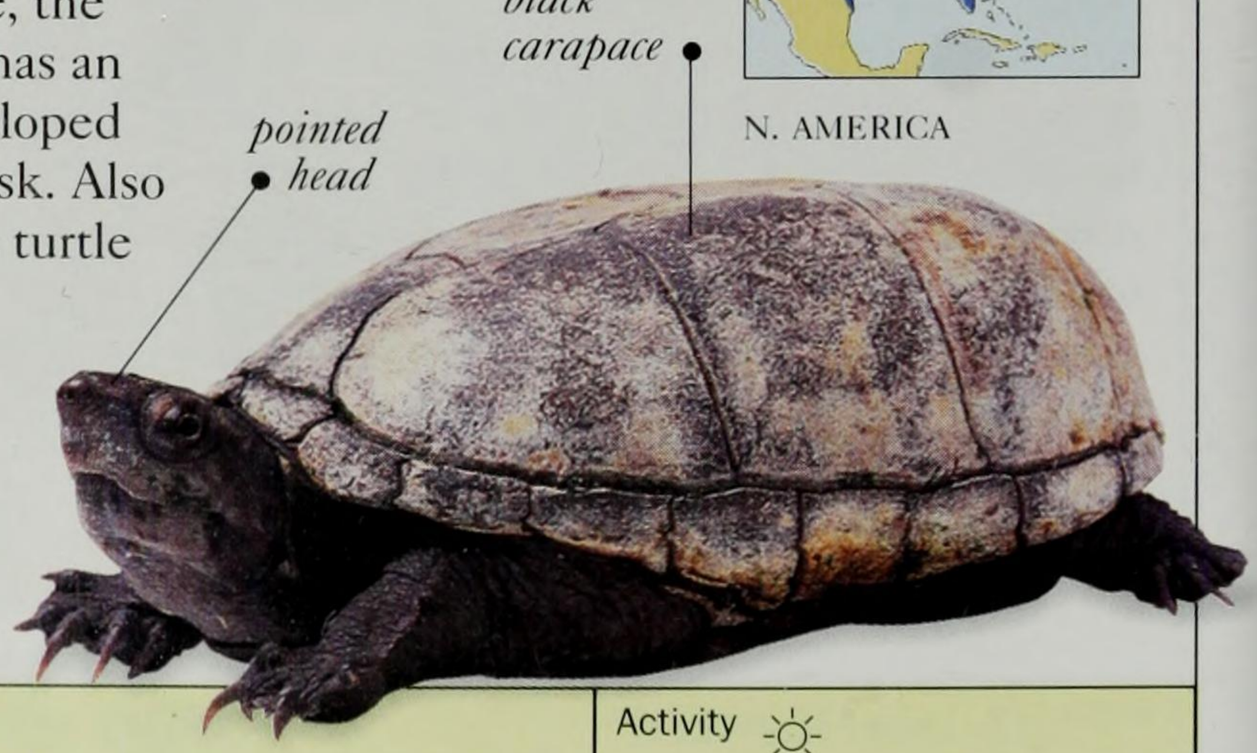
COMMON MUSK TURTLE

Two light stripes on the head and twin barbels on the chin distinguish this species from its relative, the Eastern Mud Turtle (*Kinosternon subrubrum*). It has an olive-brown to black carapace, and its well-developed legs enable it to climb slanting tree trunks to bask. Also known as the Stinkpot Turtle, this small aquatic turtle secretes a pungent musk when disturbed.

- **OCCURRENCE** E. North America. In lakes, ponds, and rivers.
- **REPRODUCTION** Lays 1–9 eggs.
- **SIMILAR SPECIES** Loggerhead Musk Turtle (*Kinosternon minor*).



N. AMERICA



Length 4¼–5½in (11–14cm)	Diet	Activity

Family DERMATEMYDIDAE	Species *Dermatemys mawii*	Status Endangered

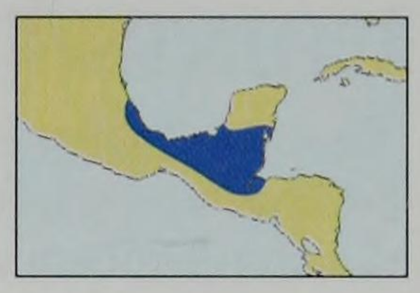
CENTRAL AMERICAN RIVER TURTLE

A large, drab brown or gray species, this river turtle has a broad, streamlined carapace, which may resemble leather in adult specimens, and a relatively small head with a short, forward-projecting, tubular snout. Although it is a freshwater turtle, it does occasionally enter brackish waters; it rarely ventures onto land.

• **OCCURRENCE** S.E. Mexico, Guatemala, and Belize. In large rivers and lakes.

• **REPRODUCTION** Lays 10–20 eggs.

• **REMARK** This is the sole living species in a family that dates back to the Cretaceous Period (which ended 65 million years ago).



C. AMERICA



Length 20–25½in (50–65cm)	Diet	Activity

Family CARETTOCHELYIDAE	Species *Carettochelys insculpta*	Status Rare

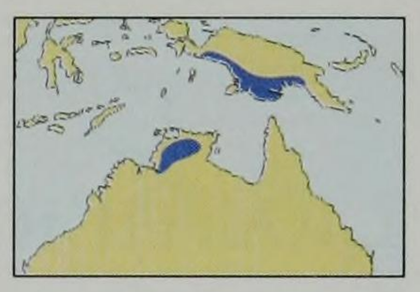
PIG-SNOUTED RIVER TURTLE

This river turtle has a pitted, leathery, gray-green carapace and a reduced white plastron. Its limbs are clawed and flipperlike, resembling those of sea turtles. The carapaces of juveniles have serrated edges and a central keel. The short head ends in a broad, tubular, fleshy, piglike snout and the eyes are large. Secretive by nature, Pig-snouted River Turtles prefer shallow, slow-moving rivers with sandy or silty bottoms, into which they burrow by scooping sand over the carapace using their forelimbs. They may also enter estuarine habitats.

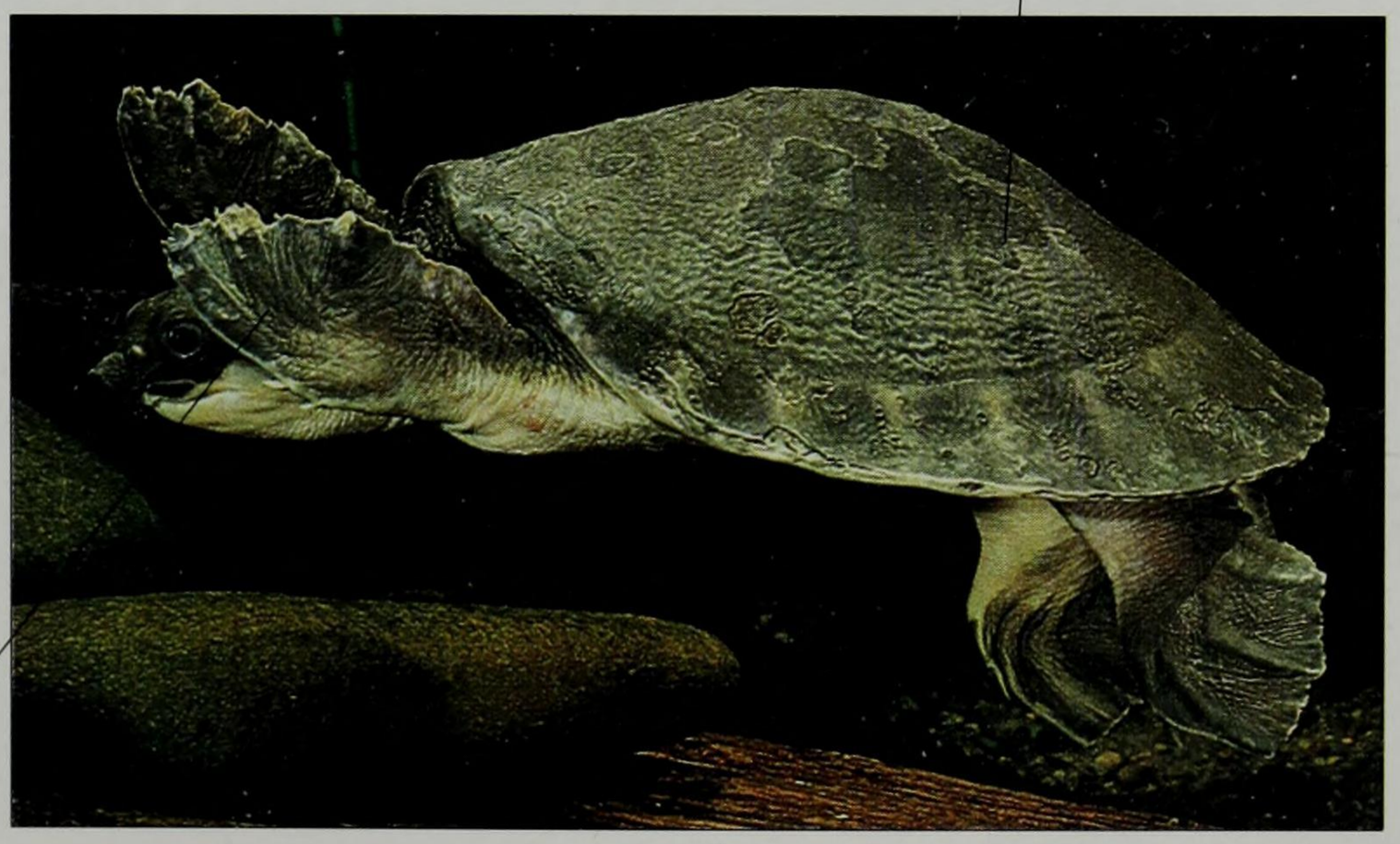
• **OCCURRENCE** S. New Guinea and N. Australia. In large rivers and lagoons.

• **REPRODUCTION** Lays 15–22 eggs.

• **REMARK** The Pig-snouted River Turtle has been known in New Guinea since the 1800s but the Australian populations of the species were not discovered until 1969.



AUSTRALASIA



Length 28–30in (70–75cm)	Diet	Activity

Family TRIONYCHIDAE	Species *Pelodiscus sinensis*	Status Locally common

CHINESE SOFTSHELL TURTLE



ASIA

As with all softshell turtles, the carapace and plastron of this species are covered by leathery skin rather than hard scutes, although the skeleton beneath still gives the turtle some protection. The rear of the carapace ends in a soft, rounded skirt, and the plastron is much reduced in size. The neck and head are long, and the long, slender snout allows the turtle to breathe while standing on the bottom of shallow lakes or rivers.

• **OCCURRENCE** E. Asia. (Introduced to Hawaii.) In lakes and rivers.

• **REPRODUCTION** Lays 12–30 eggs.

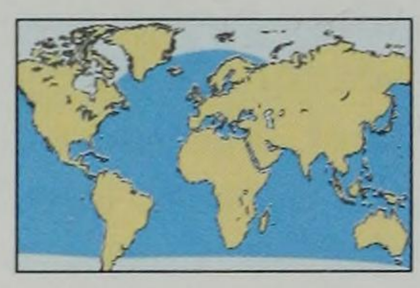
• **SIMILAR SPECIES** Wattle-necked Softshell Turtle (*Palea steindachneri*).



Length 6–12in (15–30cm)	Diet	Activity

Family DERMOCHELYIDAE	Species *Dermochelys coriacea*	Status Endangered

LEATHERBACK SEA TURTLE



WORLDWIDE

This is the only sea turtle that has a leathery carapace, which is much longer than it is broad and is strongly ridged. The skin of the front carapace continues into the neck and the large, rounded, nonretractable head. It has long flippers for swimming, which, uniquely among sea turtles, lack claws. This remarkable ocean-going turtle strays over 3,000 miles (4,800km) from its nesting grounds in search of the jellyfish that are its main source of food, and it dives to over 3,300ft (1,000m).

• **OCCURRENCE** In temperate and tropical oceans worldwide.

• **REPRODUCTION** Lays 50–160 eggs.

• **REMARK** The Leatherback Sea Turtle, or Luth, is the largest turtle in the world.



Length 5–6ft (1.5–1.8m)	Diet Mainly jellyfish	Activity

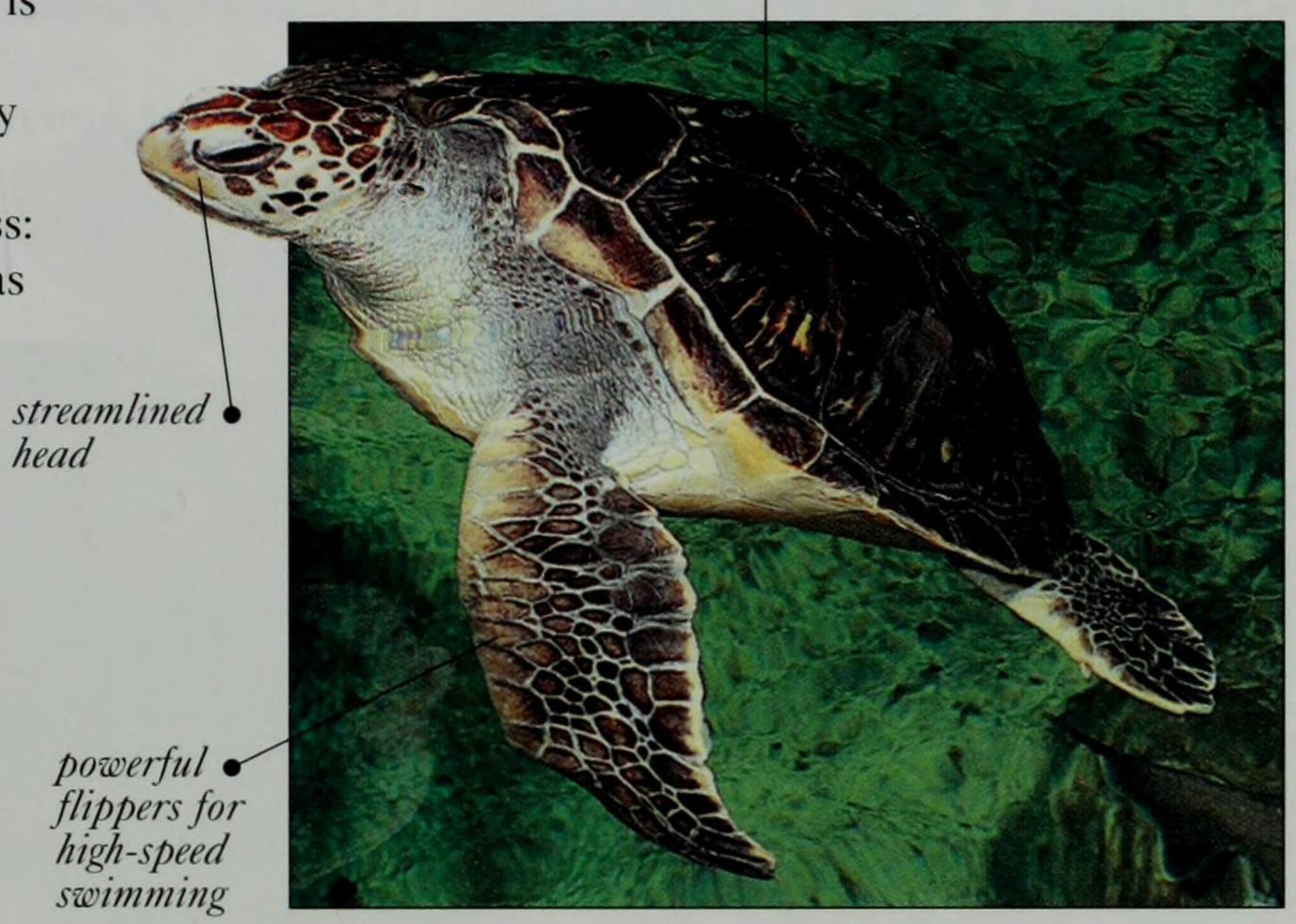
Family CHELONIIDAE	Species *Chelonia mydas*	Status Endangered

GREEN SEA TURTLE



WORLDWIDE

This is the most familiar of the marine turtles, recognized by its mottled green or brown, shield-shaped carapace and the large, light-edged, dark scutes of the head and limbs. An ocean-going migrant, its foraging and nesting areas may be over 625 miles (1,000km) apart. It is the only marine turtle that leaves the water to bask in order to raise its body temperature. Gentle sweeps of the foreflippers make swimming effortless: this turtle can swim six times as fast as freshwater turtles. Adults are vegetarian, but juveniles also feed on marine invertebrates.



• **OCCURRENCE**
In temperate and tropical oceans worldwide.

• **REPRODUCTION**
Lays 100–200 eggs.

• **SIMILAR SPECIES**
Loggerhead Sea Turtle (*Caretta caretta*).

Length 2½–3ft (0.8–1m)	Diet	Activity

Family CHELONIIDAE	Species *Eretmochelys imbricata*	Status Endangered

HAWKSBILL SEA TURTLE



WORLDWIDE

A relatively small sea turtle, this species is easily identified by its long, narrow snout, which resembles the bill of a bird of prey. The brown, shield-shaped carapace is serrated at the back. This is the least migratory of the sea turtles, traveling only a few hundred miles in a season. On land it moves its front-left and rear-right flippers together, then its front-right and rear-left ones; other sea turtles move both front flippers together, in a more laborious dragging motion. The Hawksbill Sea Turtle is greatly affected by reef destruction and coastal pollution, both of which kill sponges, which form a major part of this turtle's diet.



• **OCCURRENCE** In tropical oceans and, occasionally, in temperate waters worldwide.

• **REPRODUCTION** Lays 32–200 eggs.

• **SIMILAR SPECIES**
Loggerhead Sea Turtle (*Caretta caretta*).

Length 2½–3ft (0.8–1m)	Diet Mainly sponges	Activity

Family CHELYDRIDAE	Species *Chelydra serpentina*	Status Common

COMMON SNAPPING TURTLE



N., C., & S. AMERICA

Dull olive-green to brown in color, this stoutly built turtle has a domed, slightly serrated carapace, a powerful head and limbs, a long tail, and a reduced plastron. An adult snapping turtle is a top aquatic carnivore, preying on almost any organism small enough to swallow. The alligator is its only predator, although its nests are vulnerable to attacks from raccoons and other animals.

• **OCCURRENCE** E. and C. North America, Central America, and N.W. South America. In almost any freshwater habitat and some brackish ones.

• **REPRODUCTION** Lays 20–40 eggs.

• **SIMILAR SPECIES** Alligator Snapping Turtle (*Macroclemys temminckii*, below).

• **REMARK** Its bite can cause serious injury to fingers and toes.



Length 8–16in (20–40cm)	Diet	Activity

Family CHELYDRIDAE	Species *Macroclemys temminckii*	Status Endangered

ALLIGATOR SNAPPING TURTLE



N. AMERICA

The largest freshwater turtle in the Americas, this species has a serrated and keeled carapace, and a much-reduced plastron to allow for the massive, clawed limbs. The head is large, with powerful jaws that terminate in a downturned hook. A pink, wormlike projection on its tongue is used to lure fish, which are captured as the jaws snap shut. A fully aquatic species, this turtle can remain underwater for 40–50 minutes before it has to breathe at the surface. Males grow much larger than females.

• **OCCURRENCE** S.E. US. In rivers, oxbow lakes, and bayous.

• **REPRODUCTION** Lays 10–60 eggs.

• **SIMILAR SPECIES** Common Snapping Turtle (*Chelydra serpentina*, above).

• **REMARK** The bite of even a medium-sized specimen can sever a human finger.



Length 16–31in (40–80cm)	Diet	Activity

Family PLATYSTERNIDAE	Species *Platysternon megacephalum*	Status Endangered

BIG-HEADED TURTLE

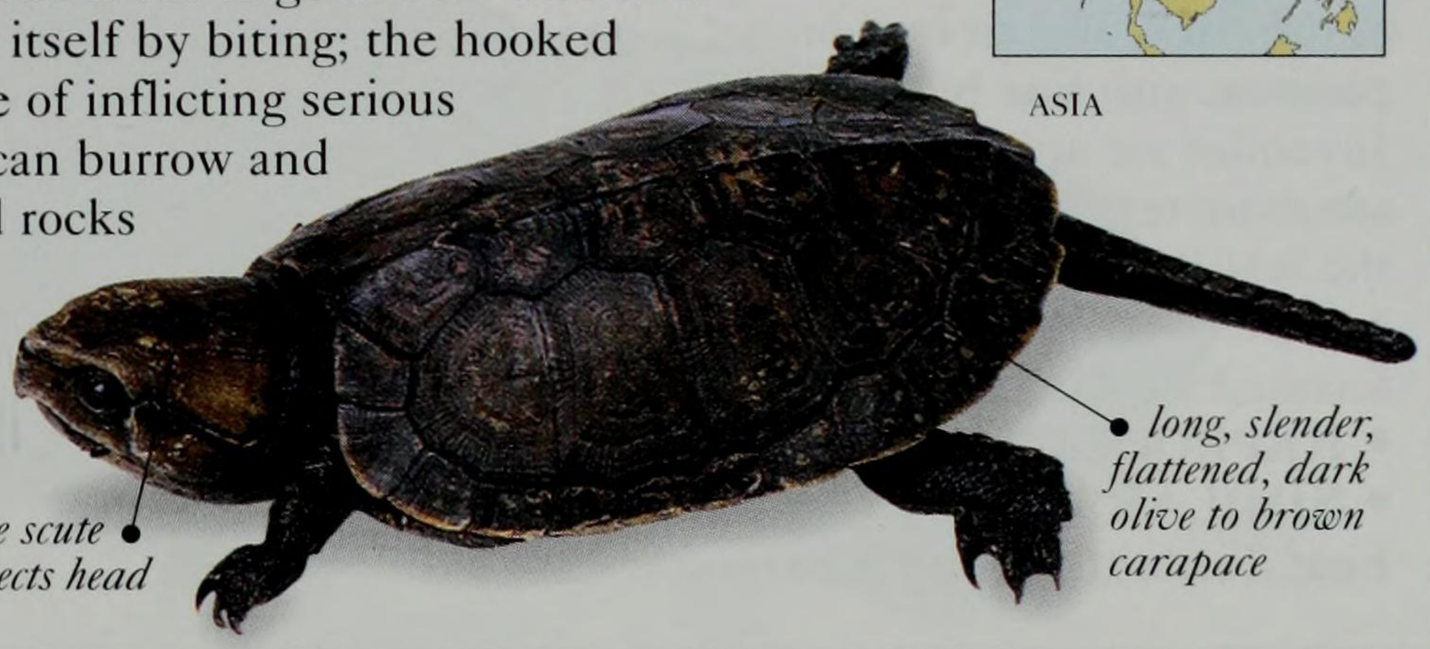
This Asian species is easily recognized by its flattened body, massive head, and long tail. The head is too large to be withdrawn into the shell so the turtle defends itself by biting; the hooked jaws of large specimens are capable of inflicting serious injury. It is a poor swimmer but it can burrow and climb, and it scales fallen trees and rocks in search of food or a basking site.

• **OCCURRENCE** N. Southeast Asia and S. Asia. In shallow mountain streams.

• **REPRODUCTION** Lays 2 eggs.



ASIA



Length 5½–8in (14–20cm)	Diet	Activity

Family EMYDIDAE	Species *Clemmys insculpta*	Status Locally common

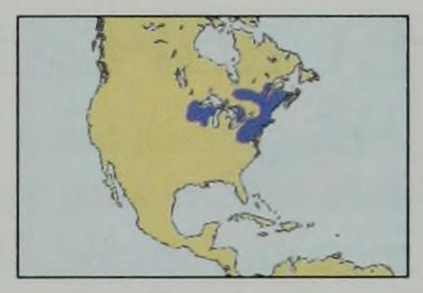
WOOD TURTLE

This turtle has a keeled, gray to brown carapace, a yellow plastron blotched with darker pigment, and a blackish head. It is partly terrestrial, venturing a short distance from water in search of food, which includes fungi and invertebrates, as well as vegetation. Members of one population have been seen to stomp on the ground with their front feet to attract worms to the surface.

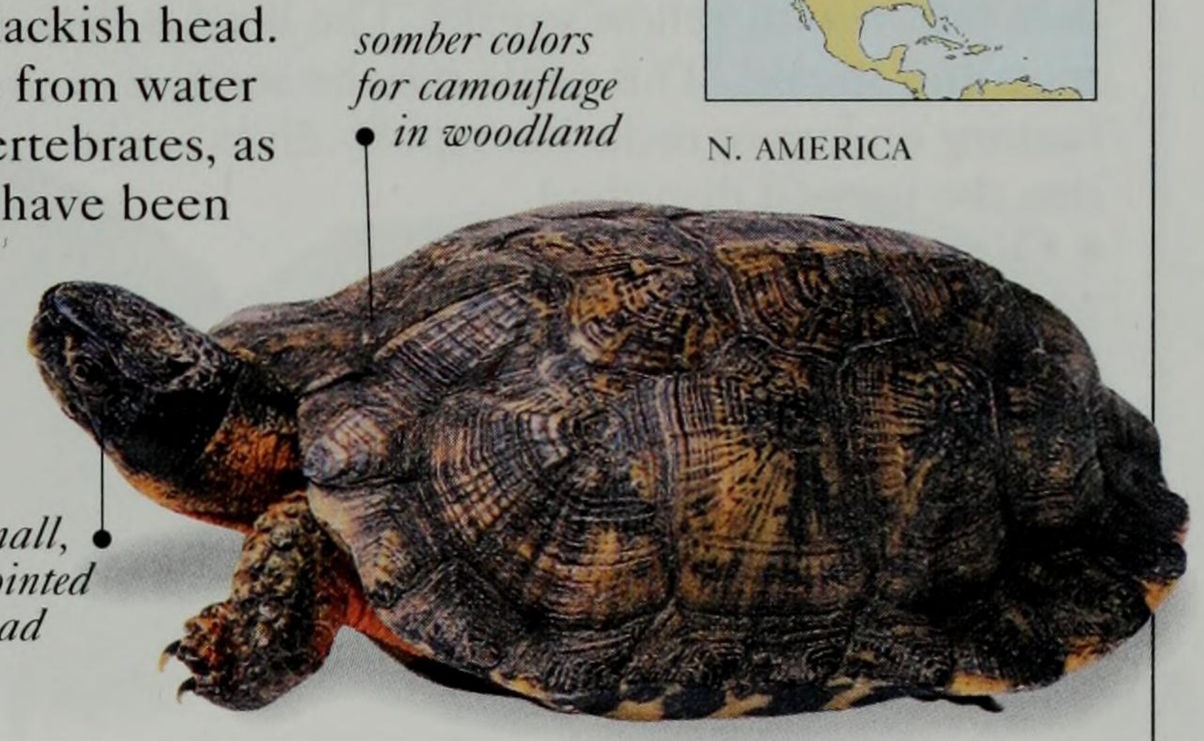
• **OCCURRENCE** N.E. North America. In woodland rivers, creeks, and marshes.

• **REPRODUCTION** Lays 4–18 eggs.

• **SIMILAR SPECIES** Bog Turtle (*Clemmys muhlenbergii*), Spotted Turtle (*C. guttata*).



N. AMERICA



Length 4¾–9in (12–23cm)	Diet	Activity

Family EMYDIDAE	Species *Cuora flavomarginata*	Status Common

YELLOW-MARGINED BOX TURTLE

Like American box turtles (such as *Terrapene carolina*, p.52), this Asian species has a hinged plastron, which closes up to protect the head and limbs. The carapace and plastron are smooth and rounded. Fine yellow stripes run from the eyes to the nape of the neck. The feet are unwebbed and suit the turtle's life on land, but it can swim well.

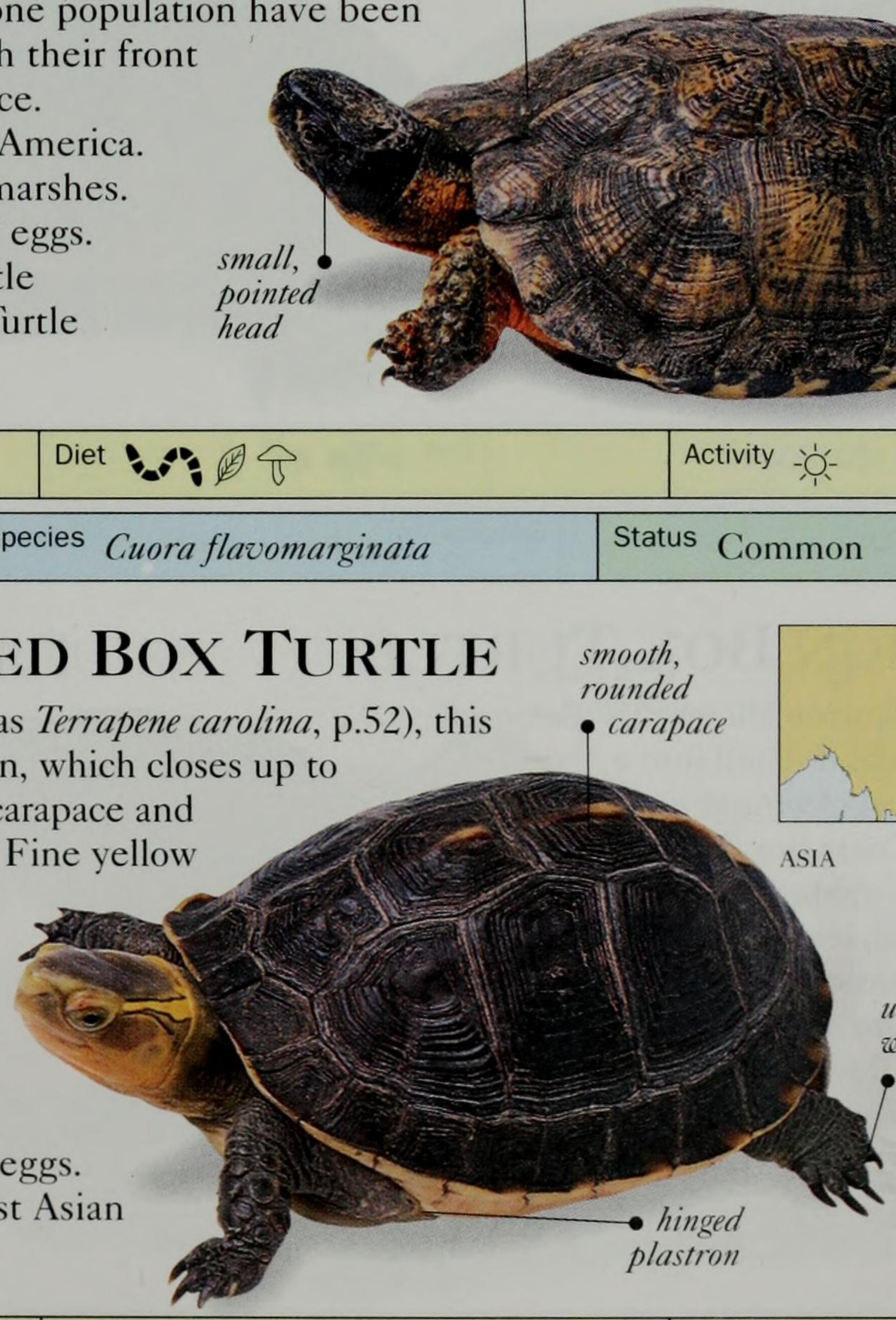
• **OCCURRENCE** E. Asia. In freshwater habitats.

• **REPRODUCTION** Lays 1–4 eggs.

• **SIMILAR SPECIES** Southeast Asian Box Turtle (*Cuora amboinensis*).



ASIA



Length 4–4¾in (10–12cm)	Diet	Activity

Family EMYDIDAE	Species *Cyclemys dentata*	Status Rare

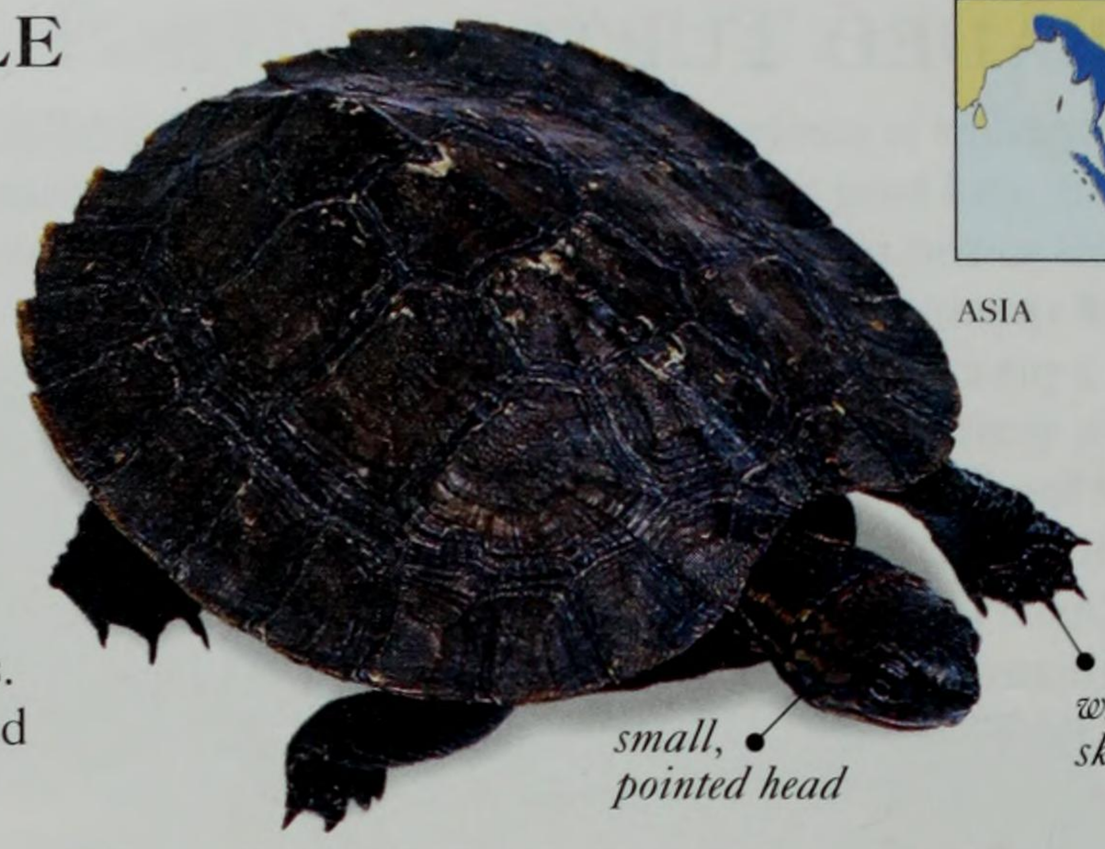
ASIAN LEAF TURTLE

This turtle has a low, brown-and-black carapace, which is serrated at the back, and an oval brown plastron with fine black lines. Juveniles are aquatic, but adults are more terrestrial, blending into the leaf-litter on the forest floor.

• **OCCURRENCE** S.E. Asia. In forested freshwater habitats.

• **REPRODUCTION** Lays 2–4 eggs.

• **SIMILAR SPECIES** Stripe-necked Leaf Turtle (*Cyclemys tcheponensis*).





ASIA

Length 9½–10in (24–26cm)	Diet	Activity

Family EMYDIDAE	Species *Emys orbicularis*	Status Locally common

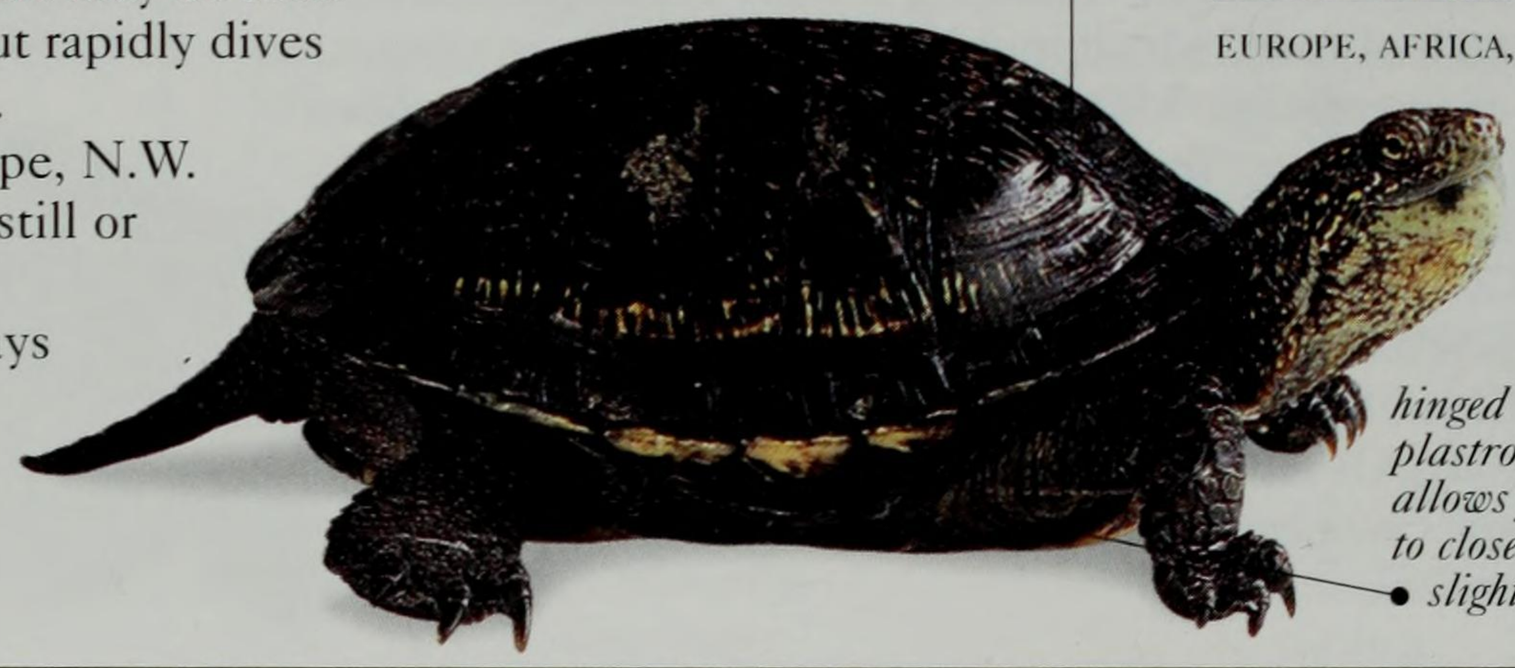
EUROPEAN POND TURTLE

This species has a smooth, oval carapace, which is black or dark brown with yellow streaks. The head is dark with yellow spots and streaks. This turtle may be seen basking on logs or rocks but rapidly dives into the water if disturbed.

• **OCCURRENCE** Europe, N.W. Africa, and N.W. Asia. In still or slow-moving freshwater.

• **REPRODUCTION** Lays 10–16 eggs.

• **SIMILAR SPECIES** Mediterranean Terrapin (*Mauremys leprosa*).





EUROPE, AFRICA, ASIA

Length 8–12in (20–30cm)	Diet	Activity

Family EMYDIDAE	Species *Terrapene carolina*	Status Common

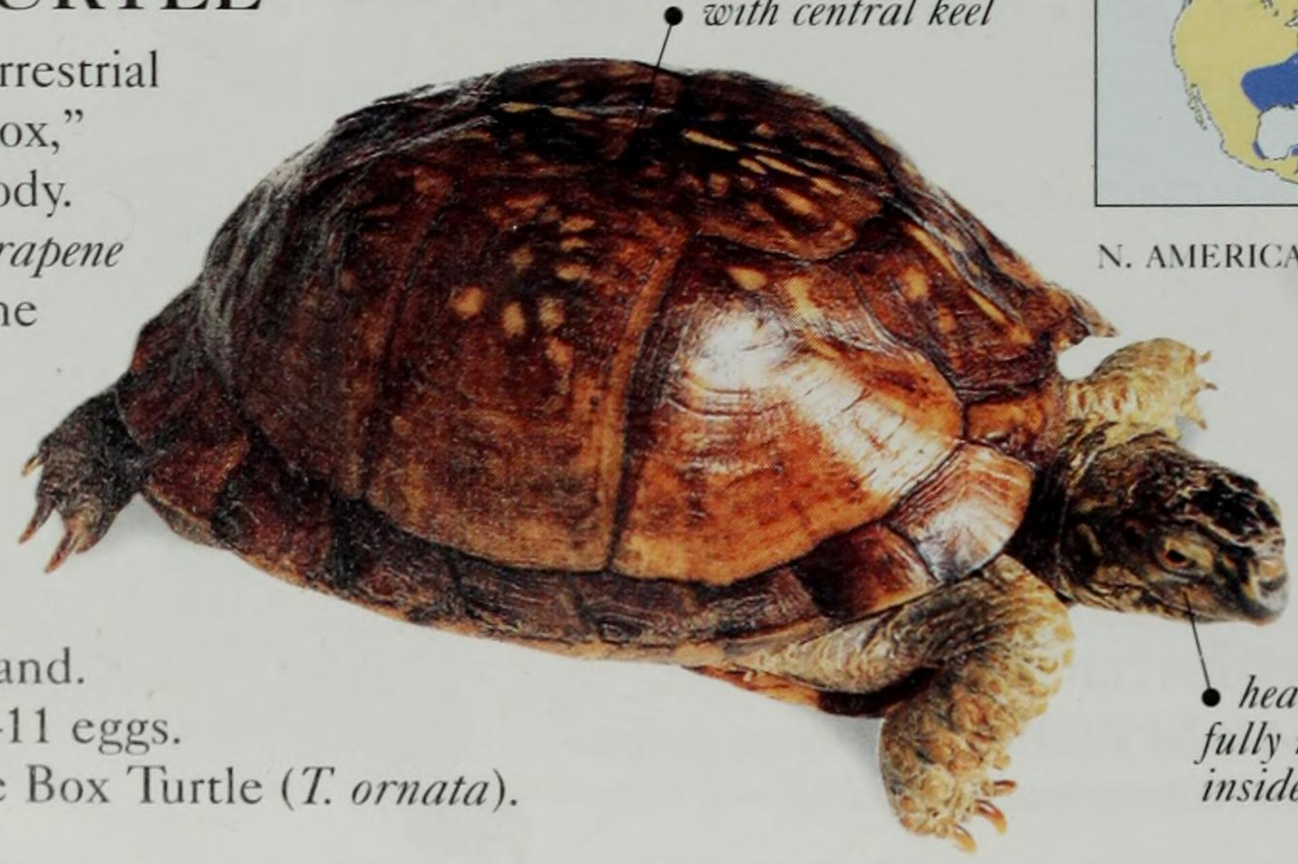
COMMON BOX TURTLE

A hinged plastron allows this terrestrial turtle to make its shell into a "box," completely enclosing the soft body. The Gulf Coast Box Turtle (*Terrapene carolina major*, shown here) is one of six subspecies, and it has a uniformly brown carapace that flares outward at the back.

• **OCCURRENCE** E. North America and E. Mexico. In woodland, pasture, and marshland.

• **REPRODUCTION** Lays 1–11 eggs.

• **SIMILAR SPECIES** Ornate Box Turtle (*T. ornata*).





N. AMERICA

Length 6¼–8¼in (16–21cm)	Diet	Activity

Family EMYDIDAE	Species *Trachemys scripta*	Status Common

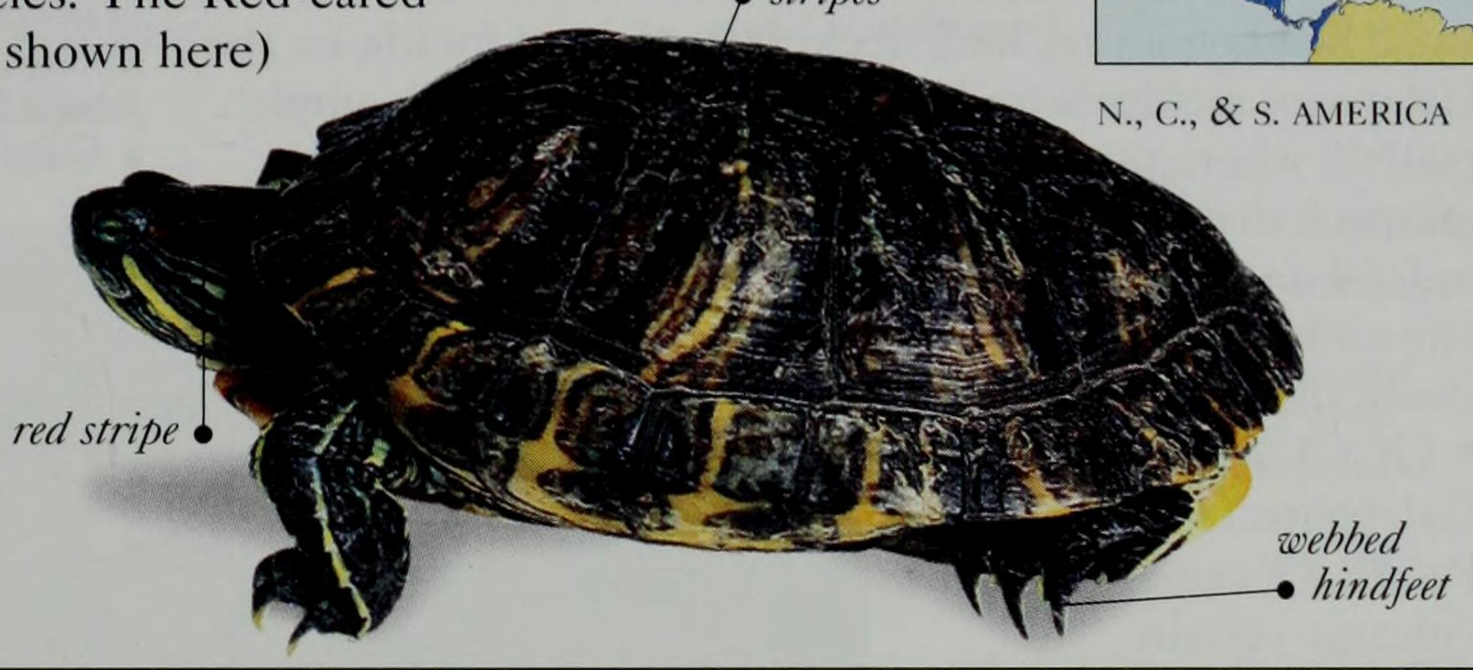
COMMON SLIDER

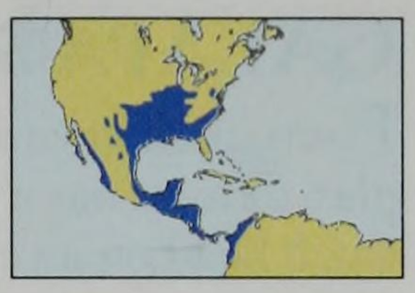
The skin of this turtle is green with yellow stripes in patterns that vary among the 16 subspecies. The Red-eared Slider (*Trachemys scripta elegans*, shown here) also has a vivid red neck stripe.

• **OCCURRENCE** North, Central, and South America. (Introduced worldwide.) In freshwater.

• **REPRODUCTION** Lays 6–11 eggs.

• **SIMILAR SPECIES** River cooters (*Pseudemys* species).





N., C., & S. AMERICA

Length 8–11in (20–28cm)	Diet	Activity

Family TESTUDINIDAE	Species *Geochelone carbonaria*	Status Common

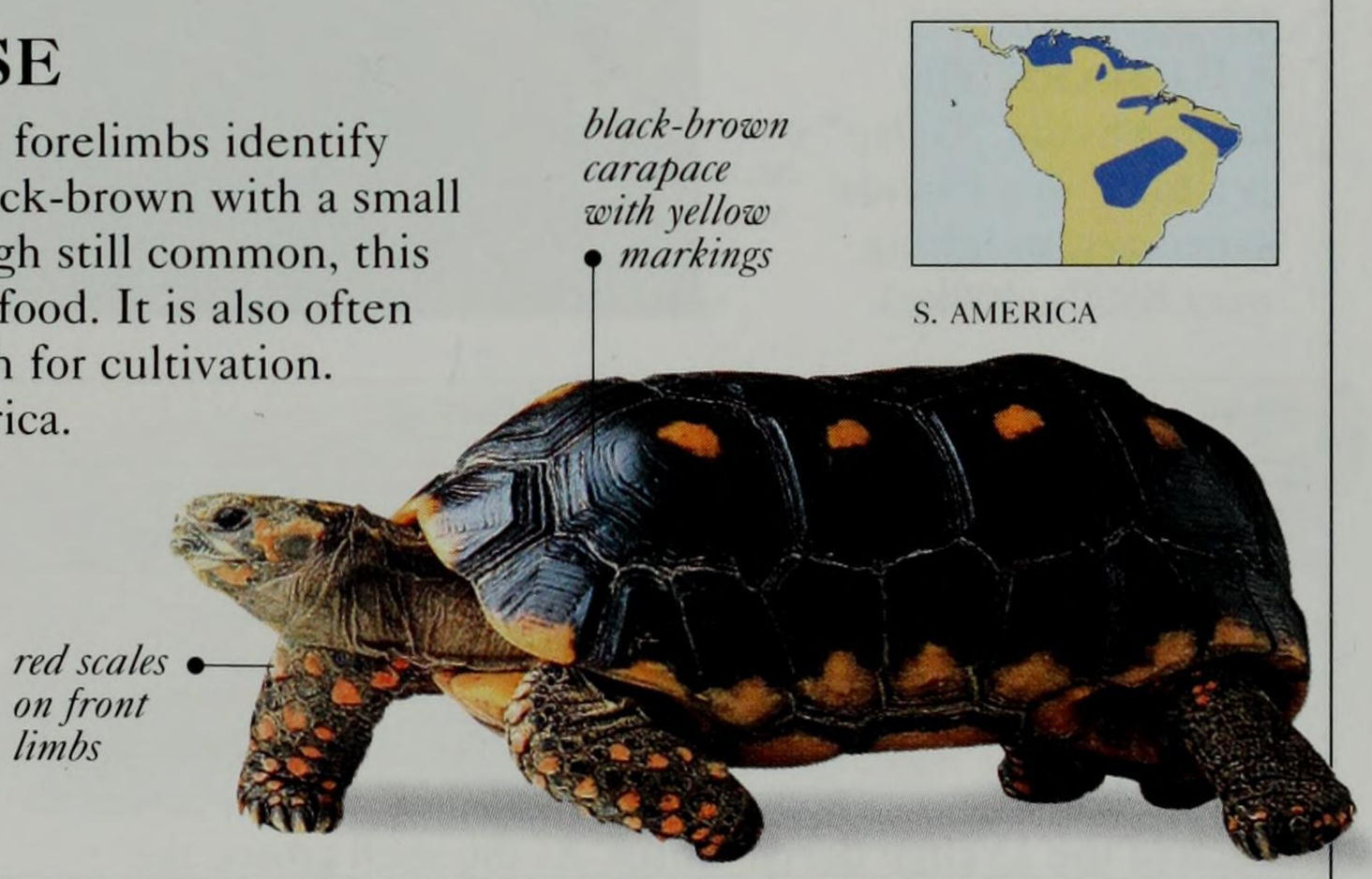
RED-FOOT TORTOISE

Large red scales on the front of the forelimbs identify this tortoise. Its long carapace is black-brown with a small yellow center to each scute. Although still common, this species has been over-collected for food. It is also often caught in flash fires, lit to clear bush for cultivation.

• **OCCURRENCE** N. South America. In savanna and savanna woodland.

• **REPRODUCTION** Lays 4–15 eggs.

• **SIMILAR SPECIES** Yellow-foot Tortoise (*Geochelone denticulata*).



S. AMERICA

Length 16–20in (40–50cm)	Diet	Activity

Family TESTUDINIDAE	Species *Geochelone elegans*	Status Endangered

INDIAN STAR TORTOISE

A starlike pattern on each scute of the carapace gives this species its common name. In adults, each scute forms a high dome, independent of its neighbor. The clublike feet are typical of a tortoise that spends much of its time walking and digging.

• **OCCURRENCE** S. Asia. In desert and arid habitats.

• **REPRODUCTION** Lays 2–20 eggs.

• **SIMILAR SPECIES** Burmese Star Tortoise (*Geochelone platynota*).



ASIA

Length 12–15in (30–38cm)	Diet	Activity

Family TESTUDINIDAE	Species *Geochelone nigra*	Status Endangered

GALAPAGOS TORTOISE

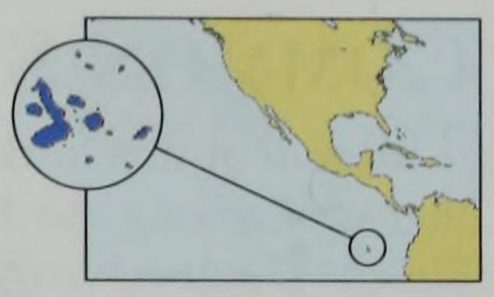
Formerly known as *Geochelone elephantopus*, this enormous gray tortoise has a huge carapace, massive limbs, and a small head on a very long neck. It is adapted for life on the Galapagos archipelago. Individuals on islands with ample rainfall, where the vegetation is lush, have a saddleback carapace that rises up at the front to allow the tortoise to feed on tall plants. On islands that have less rain and lower-growing plants, the carapace is classically dome-shaped.

• **OCCURRENCE** Galapagos Islands, Pacific Ocean. In rocky, volcanic terrain.

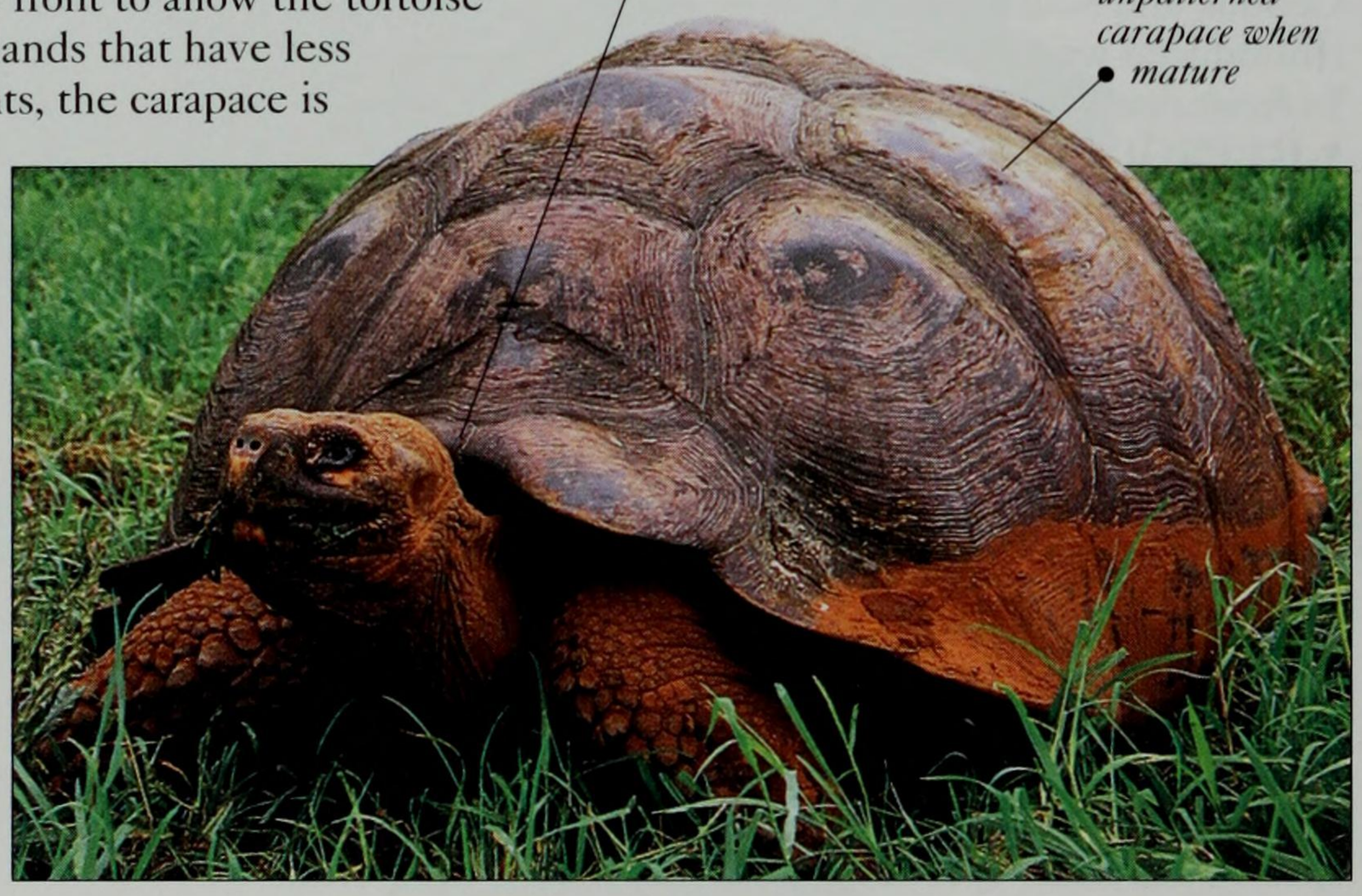
• **REPRODUCTION** Lays 10 eggs.

• **SIMILAR SPECIES** Aldabra Giant Tortoise (*G. gigantea*).

• **REMARK** The largest living "Galap" is a male in a Florida sanctuary, weighing over 880lb (400kg).



GALAPAGOS ISLANDS



Length 2½–3½ft (0.8–1.1m)	Diet	Activity

Family TESTUDINIDAE	Species *Geochelone pardalis*	Status Locally common

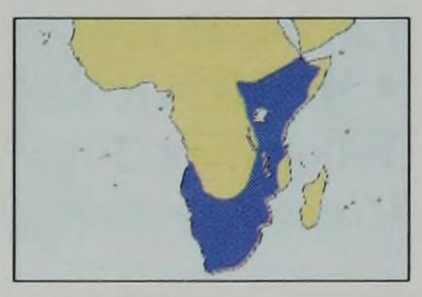
LEOPARD TORTOISE

As a juvenile this is a very striking tortoise, the yellow carapace having black sutures around every scute and a black center to each of the 13 large dorsal scutes. As the shell grows, the dark centers are broken up and forced outward. Although primarily herbivorous, this species is reported to gnaw at bones and eat hyena feces to obtain calcium for eggshell development. Some may reach 44–88lb (20–40kg) in weight.

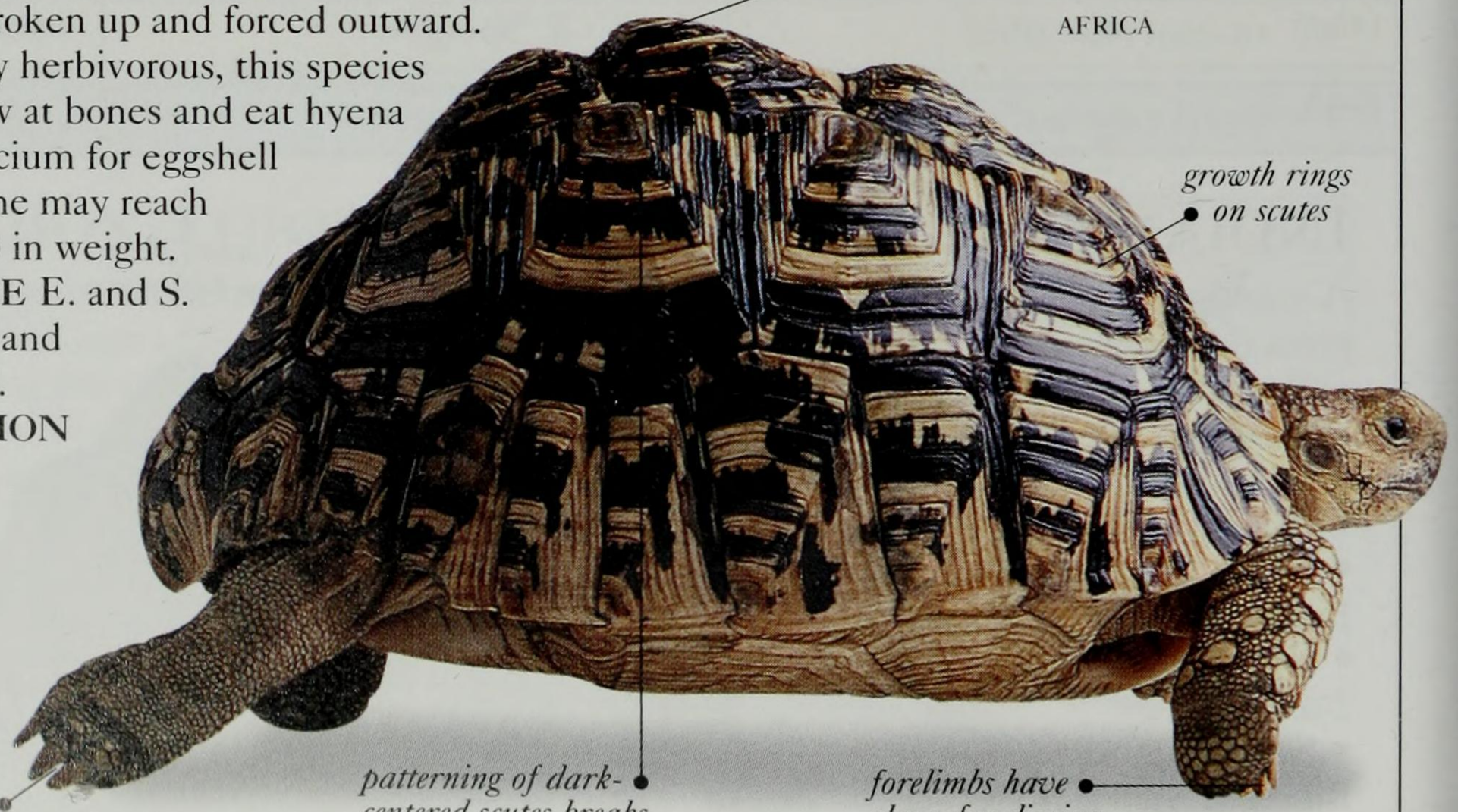
• **OCCURRENCE** E. and S. Africa. In savanna and savanna woodland.

• **REPRODUCTION** Lays 5–30 eggs.

• **SIMILAR SPECIES** Tent Tortoise (*Psammobates tentorius*).



AFRICA



Length 17½–28½in (45–72cm)	Diet	Activity

Family TESTUDINIDAE	Species *Kinixys erosa*	Status Unknown

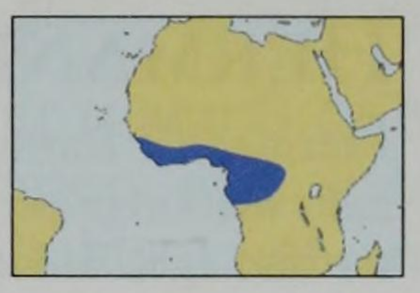
SERRATED HINGE-BACK TORTOISE

This is the largest of the hinge-back tortoises and also the most unusual. All hinge-backs can pivot the rear of the carapace downward but that of the Serrated Hinge-back flares out again to form a serrated "skirt."

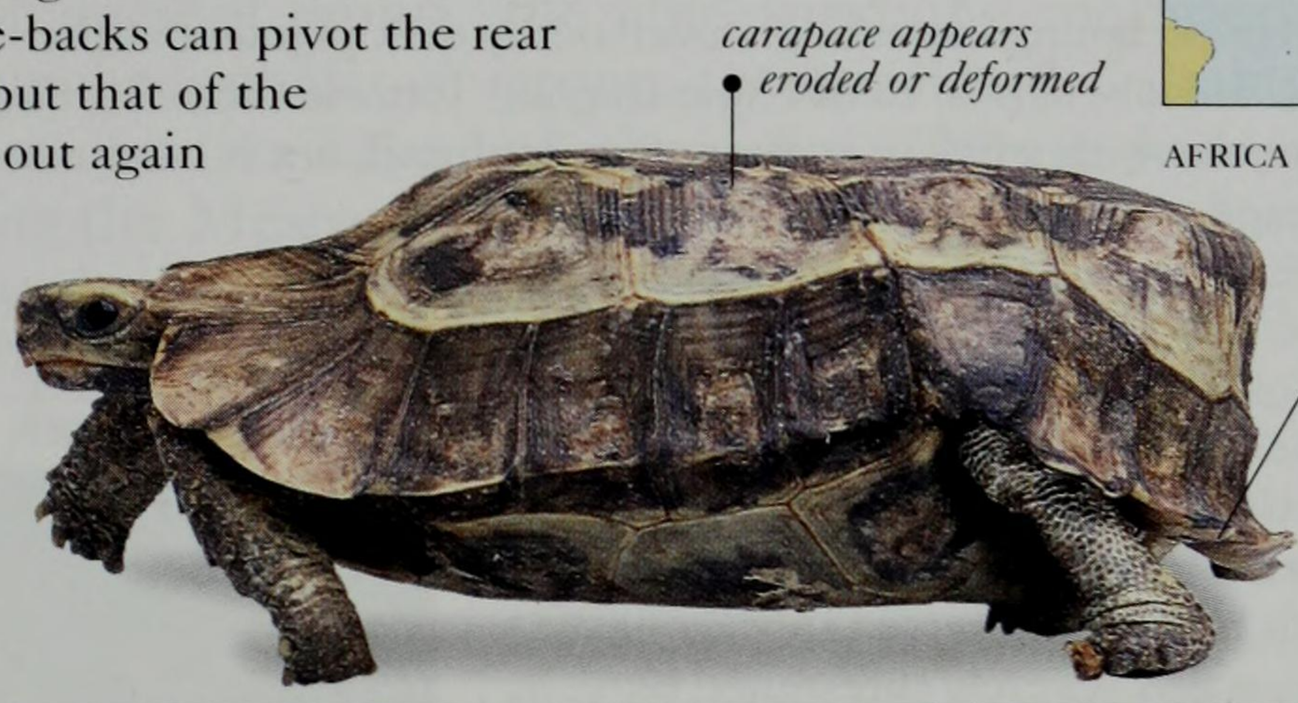
• **OCCURRENCE**
W. Africa. In rainforest.

• **REPRODUCTION**
Lays 2–10 eggs.

• **SIMILAR SPECIES**
Home's Hinge-back Tortoise (*Kinixys homeana*).



AFRICA



Length 8–12in (20–30cm)	Diet	Activity

Family TESTUDINIDAE	Species *Malacochersus tornieri*	Status Endangered

PANCAKE TORTOISE

The brown-and-black Pancake Tortoise is perhaps the strangest of all African tortoises. Although in juveniles the carapace is domed, it becomes completely flat with age, allowing the tortoise to slip into tight horizontal fissures in the rocks of its mountain habitat. Feeding on succulent plants when available, the tortoise can become dormant in times of drought.

• **OCCURRENCE** E. Africa. In rocky habitats.

• **REPRODUCTION**
Lays 1–4 eggs.



AFRICA



Length 4–6in (10–15cm)	Diet	Activity

Family TESTUDINIDAE	Species *Testudo graeca*	Status Locally common

SPUR-THIGHED TORTOISE

Large spurs on the thighs and a single scute above the tail distinguish this species from Hermann's Tortoise (*Testudo hermanni*, p.56). Juveniles are yellow-brown with darker markings; older tortoises have dark brown scutes with small yellow centers.

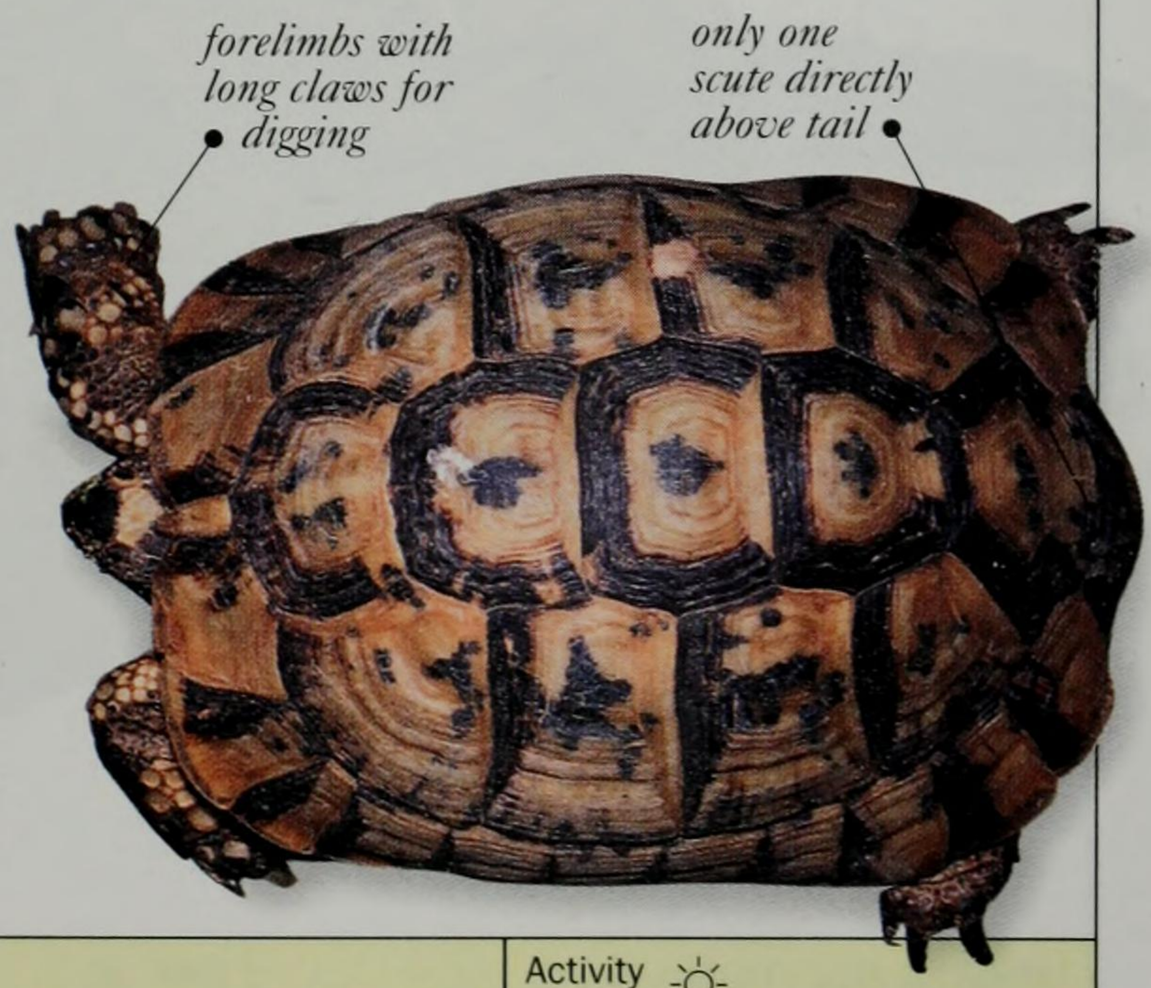
• **OCCURRENCE** S. Europe, N. Africa, and W. Asia. In scrub, meadows, and sand dunes.



EUROPE, AFRICA, ASIA

• **REPRODUCTION** Lays 2–12 eggs.

• **SIMILAR SPECIES**
Hermann's Tortoise (*T. hermanni*, p.56), Marginated Tortoise (*T. marginata*).



Length 8–10in (20–25cm)	Diet	Activity

Family TESTUDINIDAE	Species *Testudo hermanni*	Status Rare

HERMANN'S TORTOISE



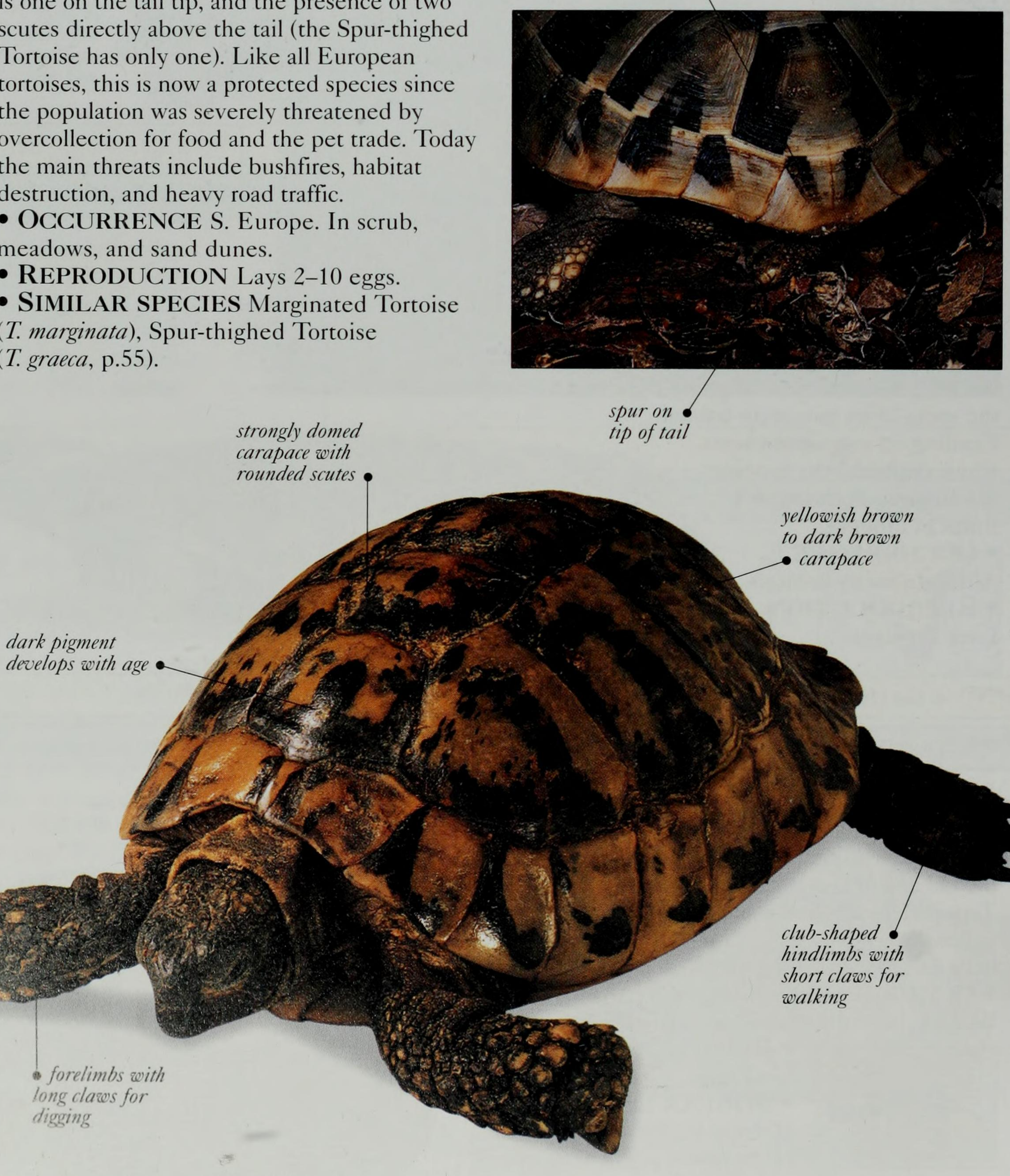
EUROPE

Hermann's Tortoise has a yellowish brown to dark brown carapace, the light markings becoming increasingly overlaid by dark pigment as the tortoise ages. It looks similar to the Spur-thighed Tortoise (*Testudo graeca*, p.55), the species with which it is most often confused, but it has a more strongly domed carapace and the individual scutes of the carapace are themselves more domed. This species can also be distinguished by the lack of spurs on its thighs, although there is one on the tail tip, and the presence of two scutes directly above the tail (the Spur-thighed Tortoise has only one). Like all European tortoises, this is now a protected species since the population was severely threatened by overcollection for food and the pet trade. Today the main threats include bushfires, habitat destruction, and heavy road traffic.

• **OCCURRENCE** S. Europe. In scrub, meadows, and sand dunes.

• **REPRODUCTION** Lays 2–10 eggs.

• **SIMILAR SPECIES** Marginated Tortoise (*T. marginata*), Spur-thighed Tortoise (*T. graeca*, p.55).



Length 6–8in (15–20cm)	Diet	Activity

TUATARAS

THE LIZARDLIKE tuataras are the last survivors of an ancient group of reptiles known as rhynchocephalians (beak-heads). All other members of the group went extinct during the Mesozoic era over 65 million years ago.

Although tuataras resemble lizards, they are classified separately because of differences in the skeleton. They also have a membranous third eyelid, not present in lizards, that passes over the open eye. Like many lizards, they have a pineal eye in the forehead. This is visible in juveniles but is shielded by skin in adults. It can register only light intensity and color but may help regulate body temperature. Some zoologists consider tuataras to be the sole surviving members of a sister group to the lizards, snakes, and amphisbaenians. Others, however, believe they are not so closely related and that they are far older, being the most ancient group of reptiles apart from those of the turtle order Testudines. Fossils virtually identical to living tuataras exist from the late Triassic period (170 million years ago), which suggests that tuataras have one of the slowest rates of evolution of any terrestrial vertebrate. The two species of tuatara living today are therefore among the most primitive reptiles in the world.

Family SPHENODONTIDAE	Species *Sphenodon punctatus*	Status Endangered

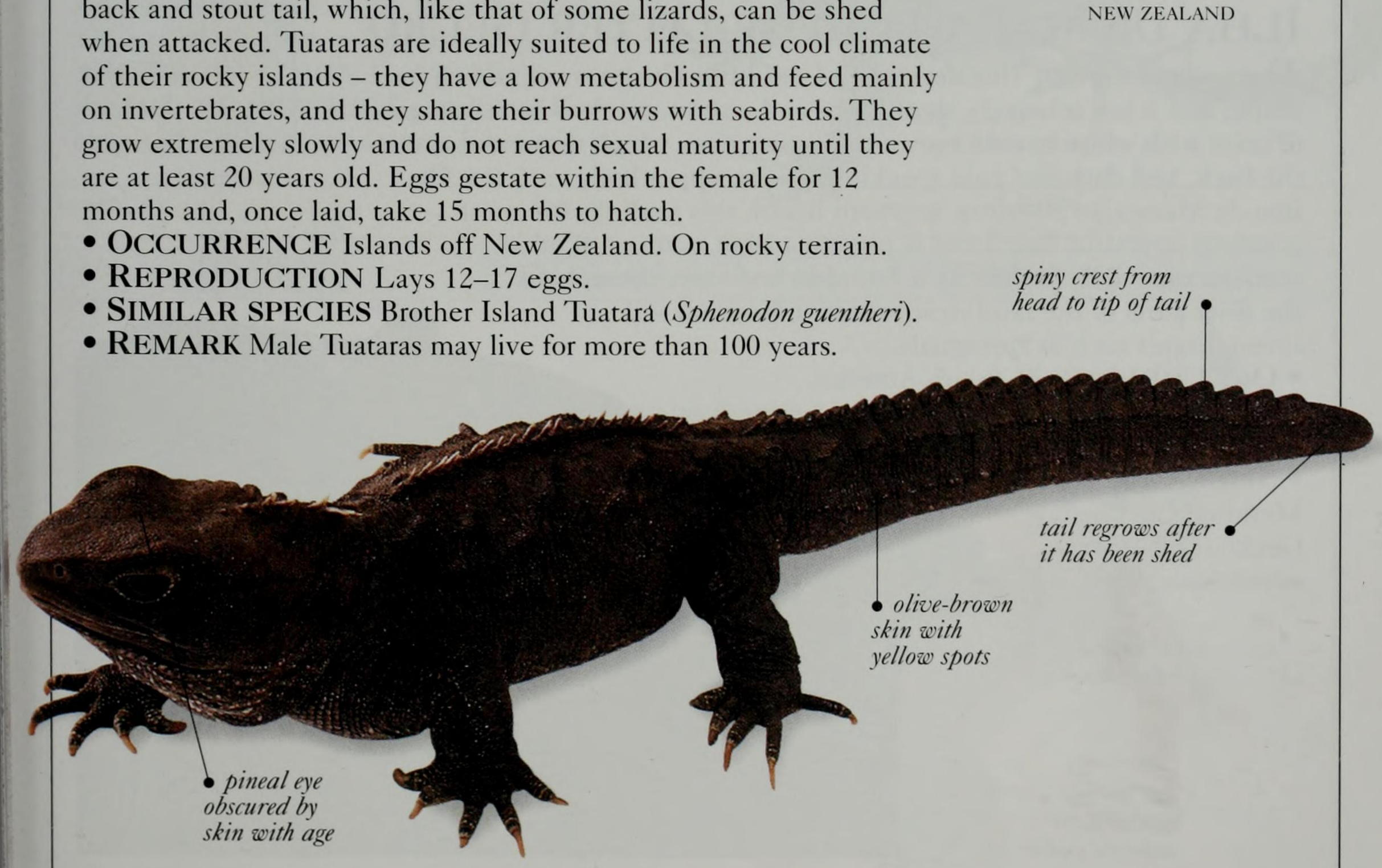
TUATARA

In general appearance the Tuatara resembles a yellow-spotted, olive-brown iguana. It has a broad, rounded head with large eyes, powerful clawed limbs, and a raised dorsal keel of spines running down the back and stout tail, which, like that of some lizards, can be shed when attacked. Tuataras are ideally suited to life in the cool climate of their rocky islands – they have a low metabolism and feed mainly on invertebrates, and they share their burrows with seabirds. They grow extremely slowly and do not reach sexual maturity until they are at least 20 years old. Eggs gestate within the female for 12 months and, once laid, take 15 months to hatch.

- **OCCURRENCE** Islands off New Zealand. On rocky terrain.
- **REPRODUCTION** Lays 12–17 eggs.
- **SIMILAR SPECIES** Brother Island Tuatara (*Sphenodon guentheri*).
- **REMARK** Male Tuataras may live for more than 100 years.



NEW ZEALAND



Length 20–25½in (50–65cm)	Diet	Activity

LIZARDS

THE LIZARDS are not a natural biological group, but they are usually grouped together as Sauria, a suborder of the Squamata (which also includes snakes and amphisbaenians).

There are more than 3,400 species of lizard, and they vary considerably in appearance and behavior. Most have four well-developed legs, a relatively long tail, movable eyelids, and external ear openings. Some, however, have reduced limbs, and some are limbless – like amphisbaenians and snakes. Some lizards have fixed, transparent "spectacles" – like those of snakes – to protect their eyes, instead of movable eyelids, and some lack external ear openings. Tongues vary from the snakelike forked tongues of monitor lizards to the globular, sticky tongues of chameleons. Lizards may or may not shed their tails as a means of defense (called caudal autotomy), depending on the species.

Most lizards are nonvenomous but two species – the Beaded Lizard (*Heloderma horridum*, p.96) and the Gila Monster (*H. suspectum*, p.97) – are venomous. The saliva of the Komodo Dragon (*Varanus komodoensis*, pp.98–99) contains bacteria that can cause a fatal infection. Most other large lizards, such as iguanas and monitors, can deliver painful bites.

In this book the lizards have been divided into the traditional 17 families. However, modern taxonomists have identified a number of smaller groups within these, and now recognize up to 30 families. They have, for example, split the huge Iguanidae, with more than 800 species, into eight smaller families.

Family GEKKONIDAE	Species *Coleodactylus septentrionalis*	Status Locally common

ILHA DE MARACA LEAF-LITTER GECKO



S. AMERICA

The body of the tiny Ilha de Maraca Leaf-litter Gecko is cylindrical in shape, and it has relatively short limbs and a short tail. It is brown to gray in color with white to pale brown transverse bars, which may meet across the back, and dark and pale speckling on the upper body surfaces. On Ilha de Maraca, in Roraima, northern Brazil, this gecko is the most common terrestrial lizard and is prey to a large number of other reptiles, especially snakes. It is found in leaf-litter throughout the drier parts of the rainforest, where it feeds on soil invertebrates such as springtails.

• OCCURRENCE N. South America.
On tropical rainforest floors.
• REPRODUCTION Lays 1 egg.
• SIMILAR SPECIES
Meridion Leaf-litter Gecko (*Coleodactylus meridionalis*).



Length 1½–2in (4–5cm)	Diet	Activity

Family GEKKONIDAE	Species *Coleonyx variegatus*	Status Common

WESTERN BANDED GECKO

This gecko can be distinguished from other American desert geckos by its soft skin and movable eyelids. It has slender limbs, with nondilated toes. The base of the stout tail is constricted and, in the male, has a large spur. These lizards are a sandy color with darker cross-bands. Being nocturnal and subterranean, they can survive in extremely hot, arid conditions.

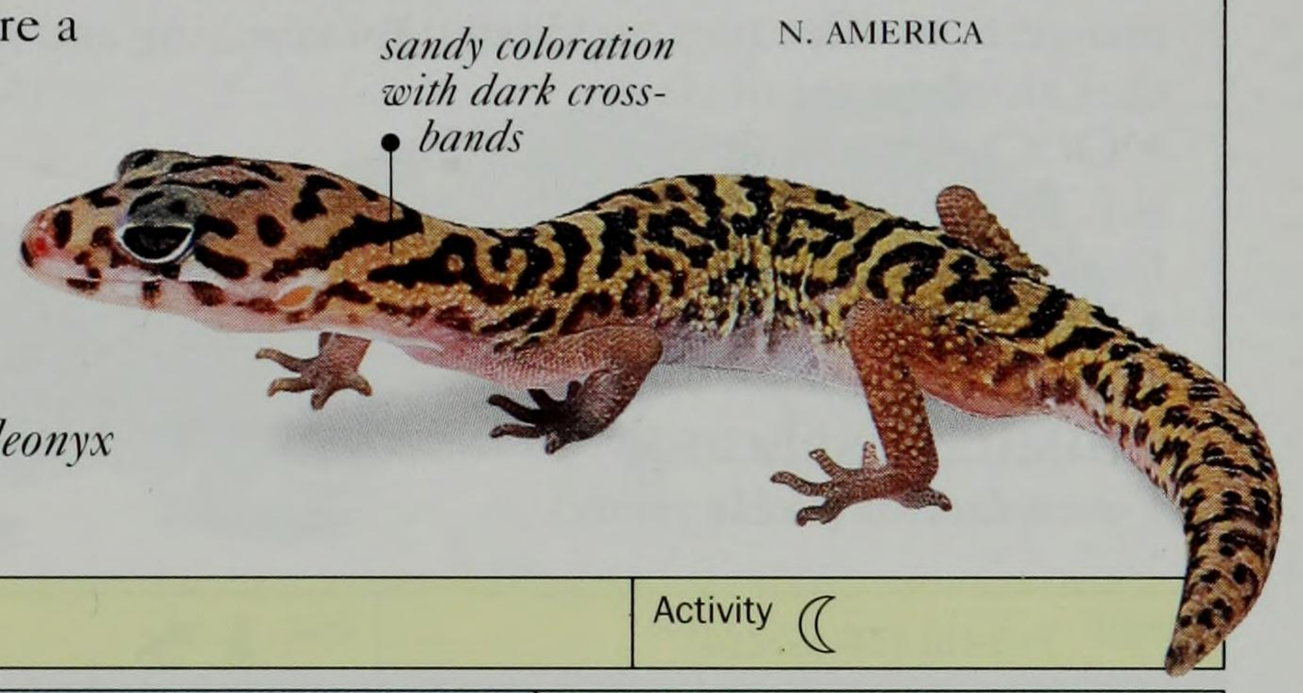
• **OCCURRENCE** S.W. US and N.W. Mexico. In desert.

• **REPRODUCTION** Lays 1–3 eggs.

• **SIMILAR SPECIES** Barefoot Gecko (*Coleonyx switaki*), Texas Banded Gecko (*C. brevis*).



N. AMERICA



Length 3¼–4¾in (8–12cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Cyrtodactylus louisiadensis*	Status Rare

LOUISIADES BOW-FINGERED GECKO

This large, slender gecko has long legs and long, clawed, nondilated, birdlike toes. The light brown body and tail are patterned with broad, bold brown bands. This arboreal species lives on tree trunks, hunting insects, spiders, and smaller geckos by night and sheltering under loose bark during the day.

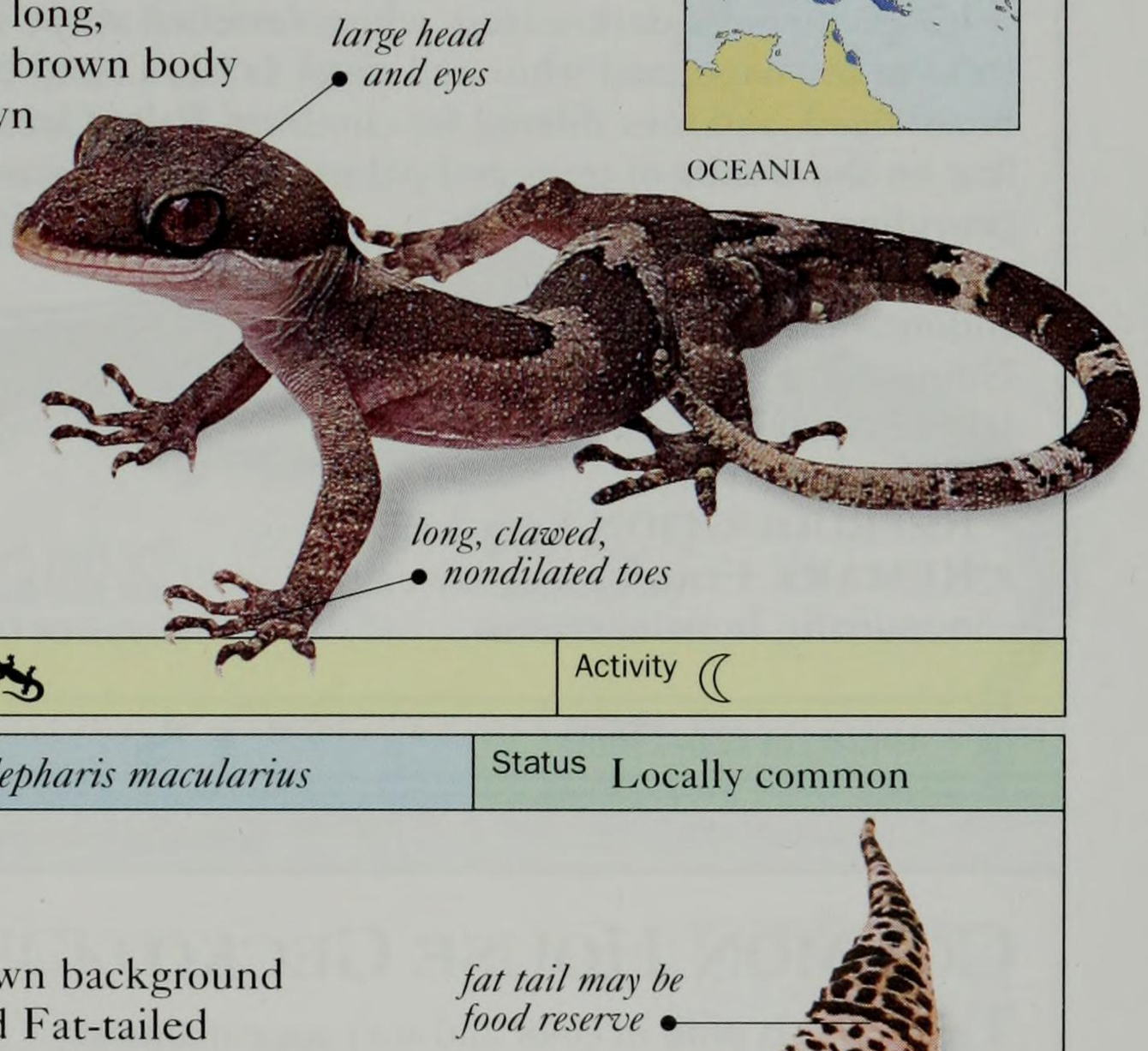
• **OCCURRENCE** N.E. Australia, New Guinea, and Solomon Islands. In rainforest.

• **REPRODUCTION** Lays 1–2 eggs.

• **SIMILAR SPECIES** Guadalcanal Bow-fingered Gecko (*Cyrtodactylus biordinis*).



OCEANIA



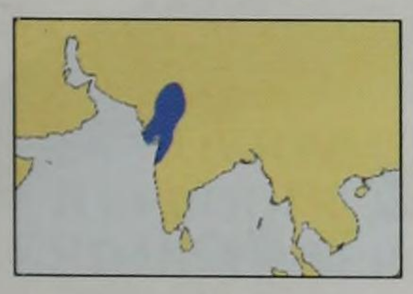
Length 12–13in (30–34cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Eublepharis macularius*	Status Locally common

LEOPARD GECKO

Dark brown or black spots on a yellow-brown background earn this species, also known as the Spotted Fat-tailed Gecko, its name. The saddle-patterned juveniles, however, look so different that they may be mistaken for another species. It is a highly robust gecko, which seems to survive in very harsh conditions. Like many geckos laying clutches of two eggs, females can lay five to six clutches each year.

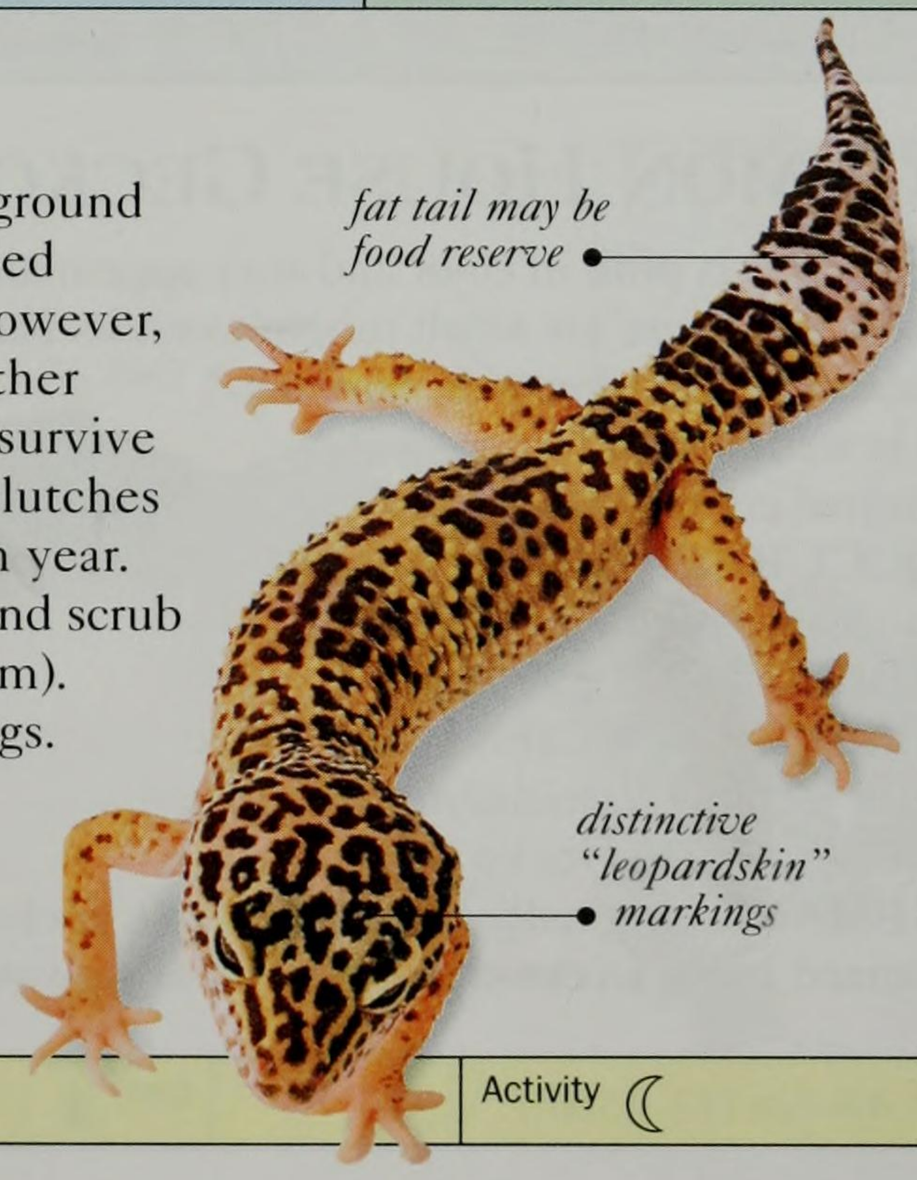
• **OCCURRENCE** S. Central Asia. In rocky desert and scrub at altitudes of up to 8,200ft (2,500m).



ASIA

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Iranian Fat-tailed Gecko (*Eublepharis angramainyu*), Turkmensian Fat-tailed Gecko (*E. turcmenicus*).



Length 8–10in (20–25cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Gekko gecko*	Status Common

TOKAY GECKO

The largest Asian gecko, the Tokay is easily recognized by its call – a repeated "to-kay." It has a big, heavy, blue-gray body, with striking orange and light blue spots, and large orange eyes. The toes are dilated for climbing and most toes also bear small claws.



ASIA

• **OCCURRENCE**
S.E. Asia. In forest and human habitations.

• **REPRODUCTION**
Lays 2–3 eggs.

• **SIMILAR SPECIES**
Forest Gecko (*Gekko smithi*).

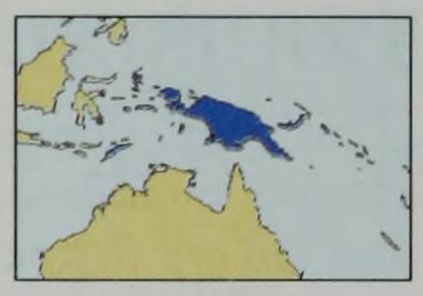


Length 7–14in (18–35cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Gekko vittatus*	Status Common

PALM GECKO

This gecko has a dark-edged, white vertebral stripe that forks at the nape, and white tail rings. It has a stout body, broad head, and toes dilated for climbing. Palm Geckos live on the trunks of trees and palms, their skin pattern providing camouflage by day.

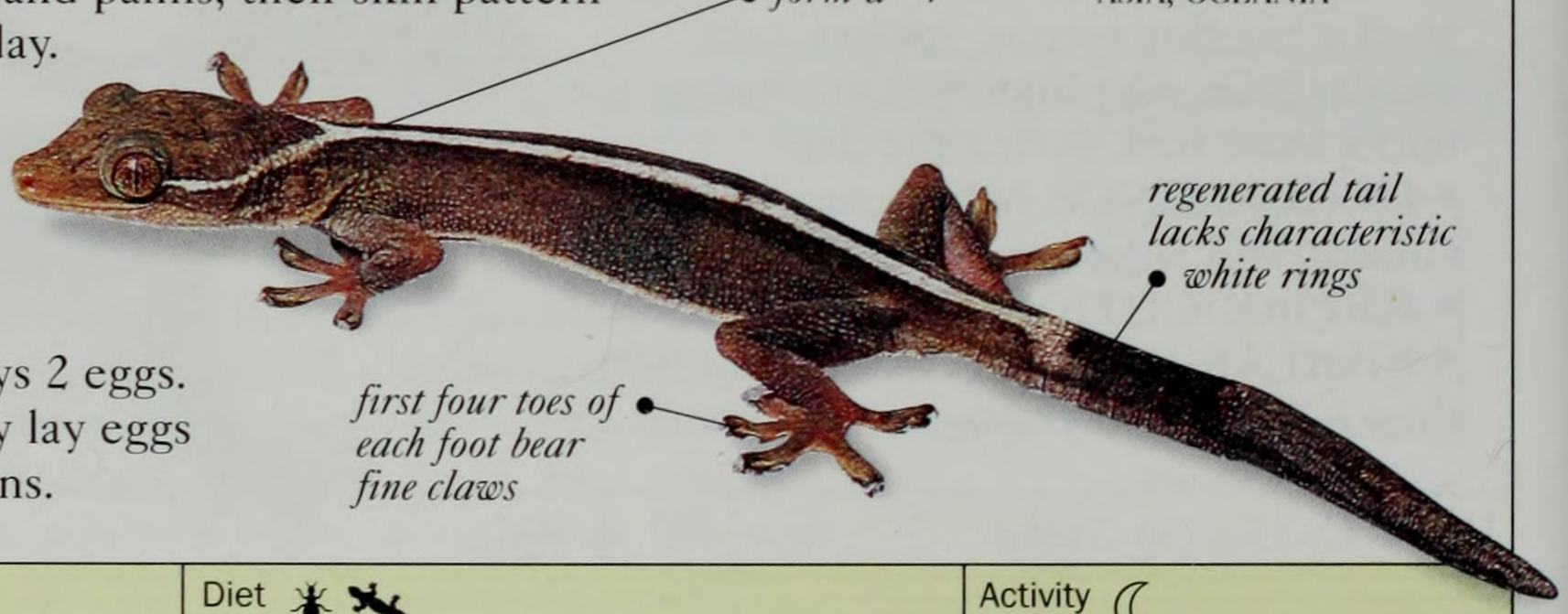


ASIA, OCEANIA

• **OCCURRENCE**
Indonesia, New Guinea, and Solomon Islands. In rainforest and on plantations.

• **REPRODUCTION** Lays 2 eggs.

• **REMARK** Females may lay eggs communally, in palm crowns.

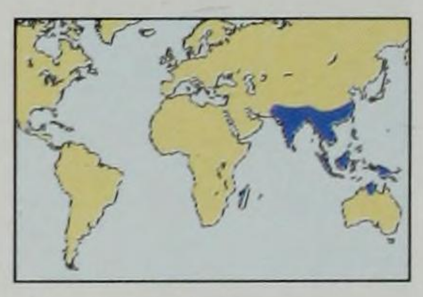


Length 10½–11in (27–29cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Hemidactylus frenatus*	Status Common

COMMON HOUSE GECKO

This gecko is pink in color and may appear almost translucent; there are small tubercles on its back. It lives and breeds alongside humans and is well known for its nocturnal cry of "chik-chak."



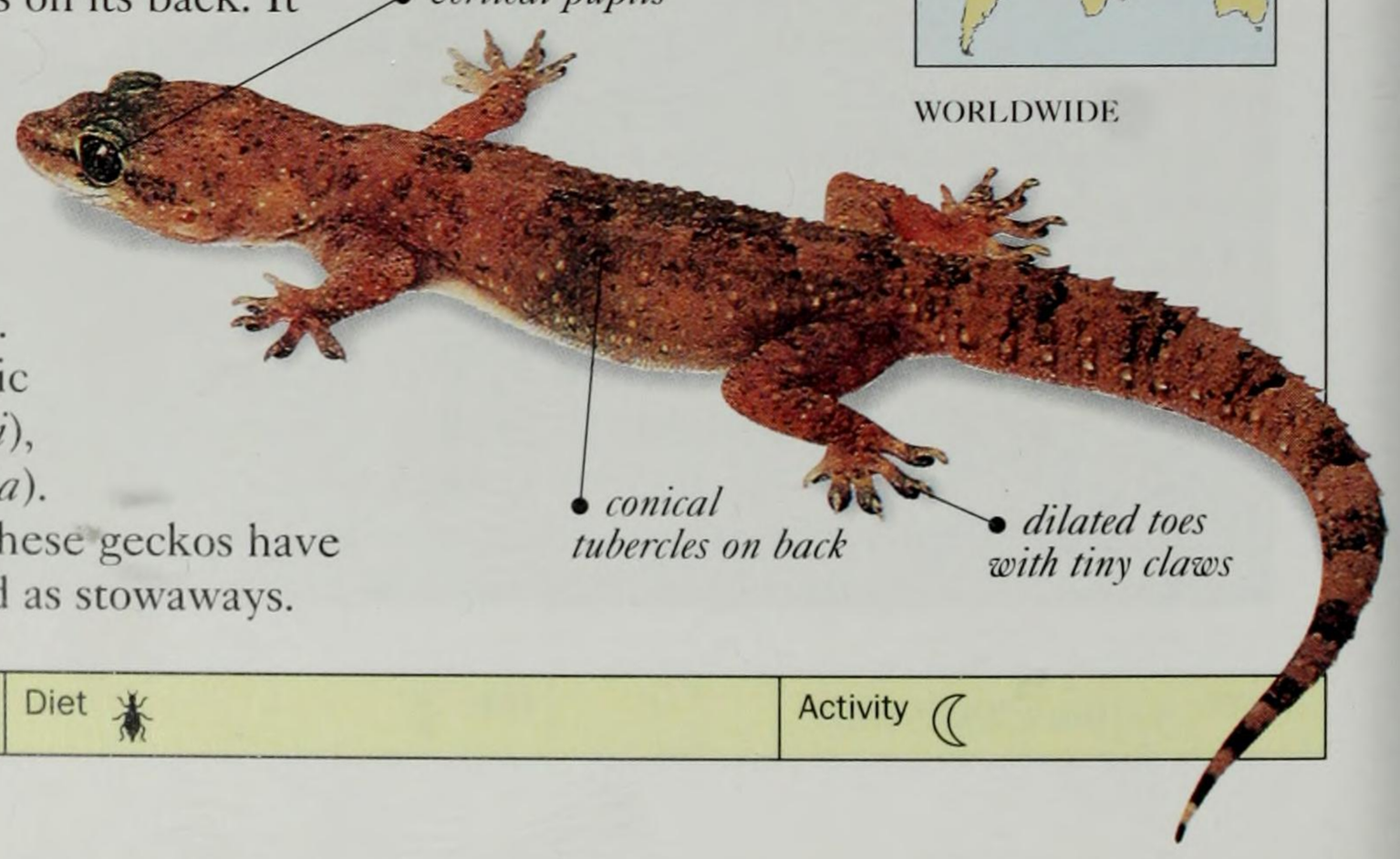
WORLDWIDE

• **OCCURRENCE** Worldwide.
In buildings occupied by humans.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Indo-Pacific House Gecko (*Hemidactylus garnotti*), Moreau's House Gecko (*H. mabouia*).

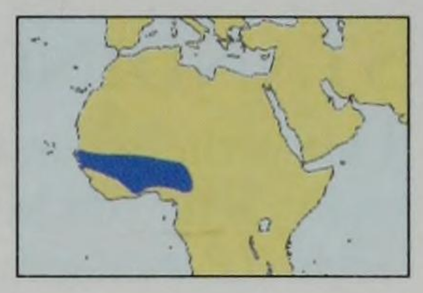
• **REMARK** Originally from Asia, these geckos have colonized much of the tropical world as stowaways.



Length 4¾–6in (12–15cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Hemitheconyx caudicinctus*	Status Locally common

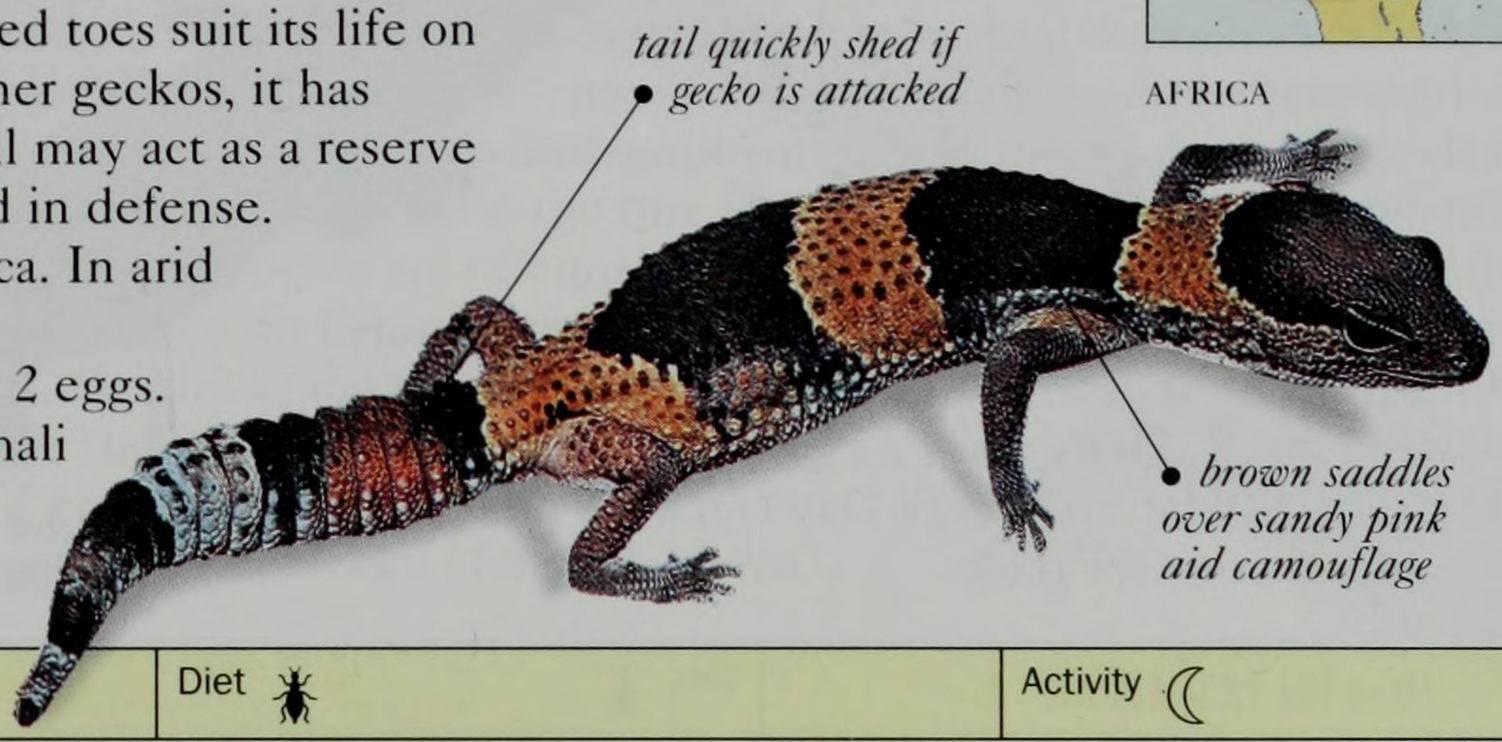
WEST AFRICAN FAT-TAILED GECKO



AFRICA

This sandy pink gecko has dark brown saddles, finely edged with white, and a similarly colored cap on its head. The slender, nondilated toes suit its life on the ground. Unlike most other geckos, it has movable eyelids. The fat tail may act as a reserve food store, or it may be shed in defense.

- **OCCURRENCE** W. Africa. In arid and rocky bush.
- **REPRODUCTION** Lays 2 eggs.
- **SIMILAR SPECIES** Somali Fat-tailed Gecko (*Hemitheconyx taylori*).



Length 7–8in (18–20cm)	Diet	Activity ☾

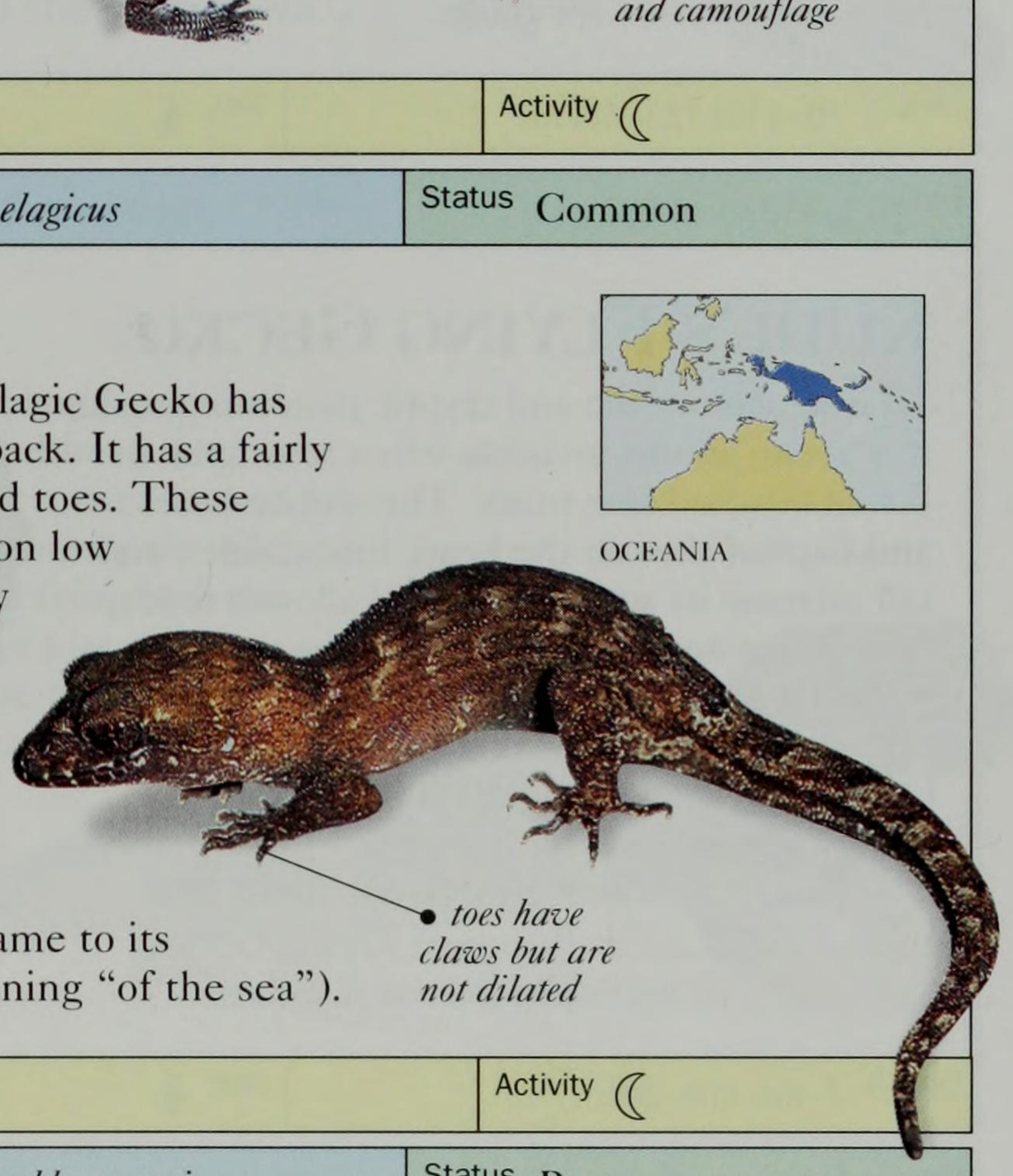
Family GEKKONIDAE	Species *Nactus pelagicus*	Status Common

PELAGIC GECKO

OCEANIA

Small, dark, and indistinctly patterned, the Pelagic Gecko has granular skin and rows of tubercles down the back. It has a fairly long tail and well-formed limbs with nondilated toes. These geckos forage for insects on the forest floor or on low trees at night, hiding in leaf-litter by day. They sometimes move in a series of short jumps.

- **OCCURRENCE** N.E. Australia and S.W. Pacific. In forest and on plantations.
- **REPRODUCTION** Lays 2 eggs.
- **SIMILAR SPECIES** Vankampen's Gecko (*Nactus vankampeni*).
- **REMARK** This species owes its common name to its colonization of the S.W. Pacific ("pelagic" meaning "of the sea").



Length 4–6¼in (10–16cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Palmatogekko rangei*	Status Rare

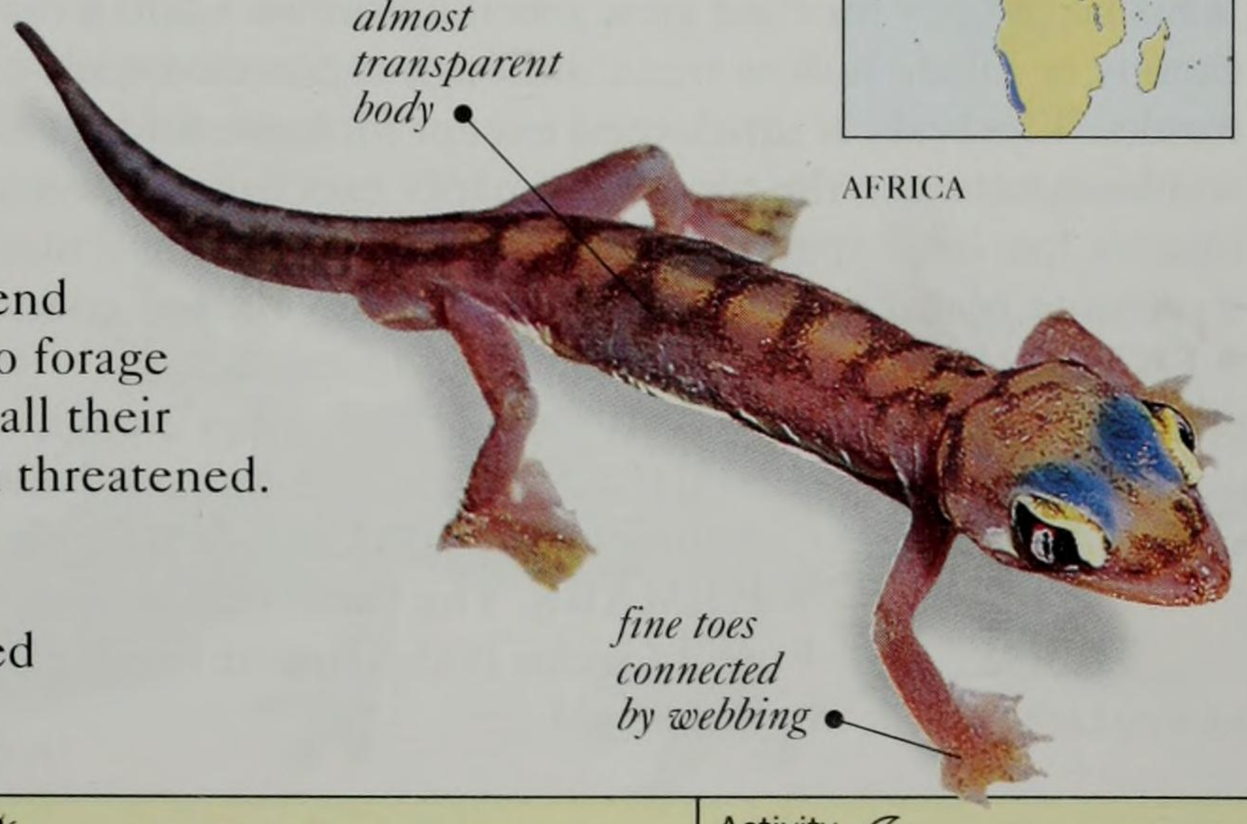
NAMIB WEB-FOOTED GECKO



AFRICA

A medium-sized, slender gecko, this species has a large head and very big eyes with vertical pupils that close to pinholes in bright sun. The nondilated, slender toes have large claws and are connected by webbing. These geckos spend the day in burrows, emerging after dark to forage for food. Dew and condensed fog supply all their water needs. They rear up and bite when threatened.

- **OCCURRENCE** S.W. Africa. In sand.
- **REPRODUCTION** Lays 2 eggs.
- **SIMILAR SPECIES** Kaoko Web-footed Gecko (*Kaokogecko vanzyli*).



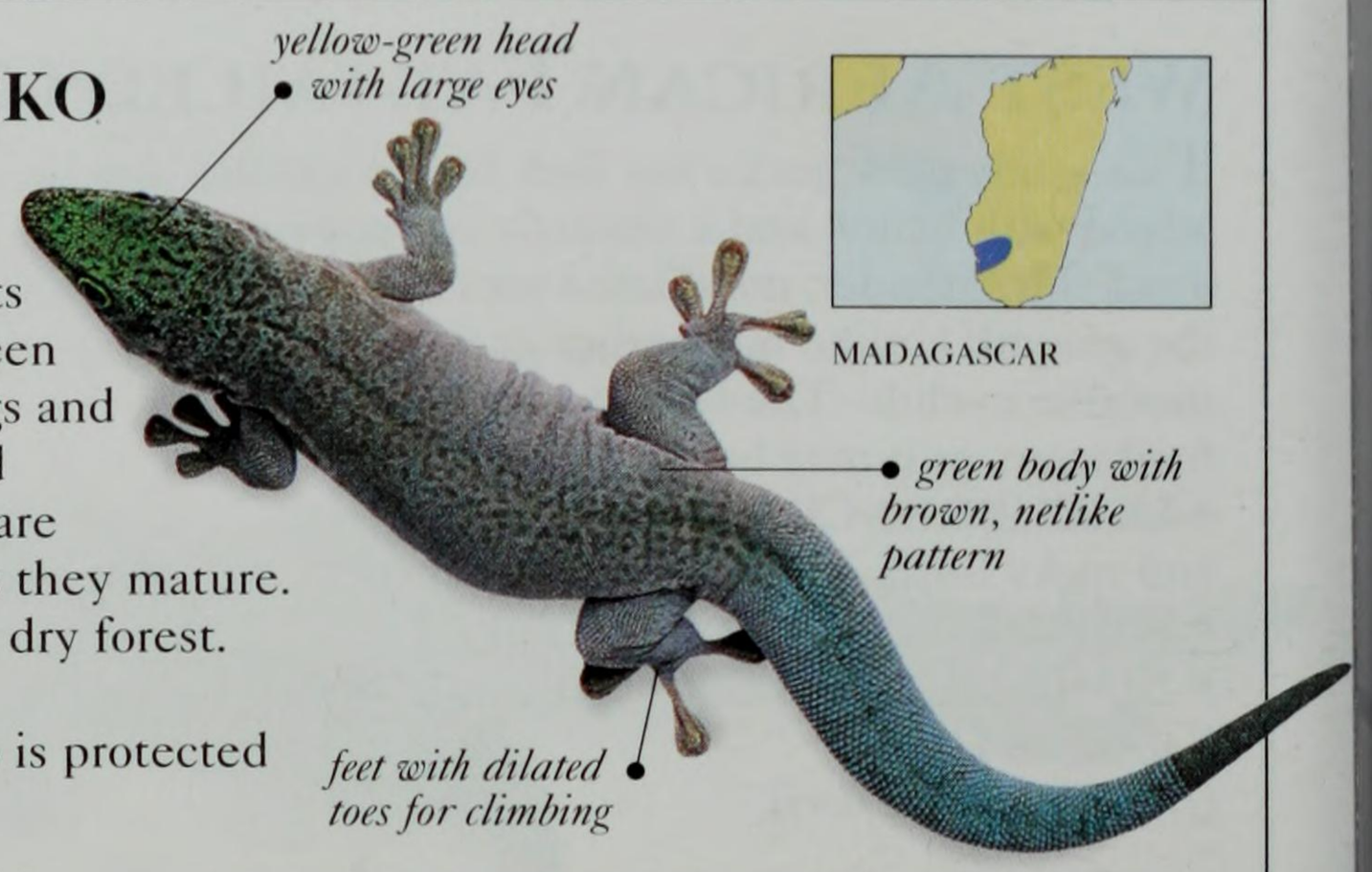
Length 4¾–5½in (12–14cm)	Diet	Activity ☾

Family GEKKONIDAE	Species *Phelsuma standingi*	Status Locally common

STANDING'S DAY GECKO

This is the second largest *Phelsuma* day gecko, after the Madagascan Giant Day Gecko (*P. madagascariensis grandis*). Adults are blue-gray on the body and yellow-green on the head, with brown netlike markings and cross-bars. During basking, the blues and yellow-greens may intensify. Hatchlings are brightly banded and change coloration as they mature.

- **OCCURRENCE** S.W. Madagascar. In dry forest.
- **REPRODUCTION** Lays 2 eggs.
- **REMARK** The Standing's Day Gecko is protected from exploitation for trade.



MADAGASCAR

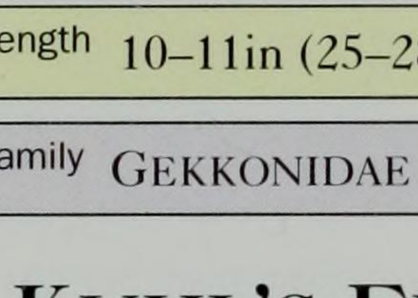
Length 10–11in (25–28cm)	Diet	Activity

Family GEKKONIDAE	Species *Ptychozoon kuhli*	Status Common

KUHL'S FLYING GECKO

Its irregular outline and cryptic patterning make this gecko almost invisible when resting on a lichen-covered tree trunk. The webbed toes and flaps of skin on the head, limbs, sides, and tail increase its surface area and allow it to leap from a tree and glide gracefully downward.

- **OCCURRENCE** S.E. Asia. In rainforest.
- **REPRODUCTION** Lays 2 eggs.
- **SIMILAR SPECIES** Burmese Flying Gecko (*Ptychozoon lionotum*).



ASIA



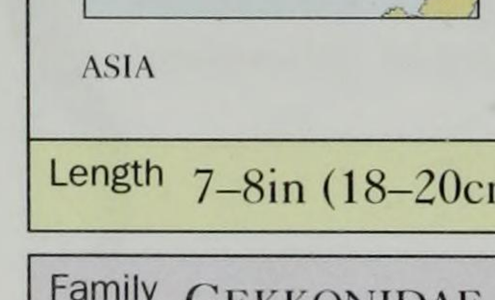
Length 7–8in (18–20cm)	Diet	Activity

Family GEKKONIDAE	Species *Rhacodactylus leachianus*	Status Rare

NEW CALEDONIAN GIANT FOREST GECKO

This cryptically mottled gray, green, or brown lizard lives mainly in the forest canopy or inside hollow trees, although it is occasionally encountered on tree trunks. The body is unadorned except for loose folds of skin on the sides and webbing between the toes. It primarily eats fruit – bananas and papayas – and insects, but large specimens also take small birds and mammals. In its remote island habitat it probably has few natural enemies.

- **OCCURRENCE** New Caledonia. In rainforest.
- **REPRODUCTION** Lays 2 eggs.
- **SIMILAR SPECIES** Bavay's New Caledonian Gecko (*Rhacodactylus chahoua*).
- **REMARK** The New Caledonian Giant Forest Gecko is the largest living gecko in the world.



NEW CALEDONIA



Length 13–15in (34–38cm)	Diet	Activity

Family GEKKONIDAE	Species *Tarentola mauritanica*	Status Common

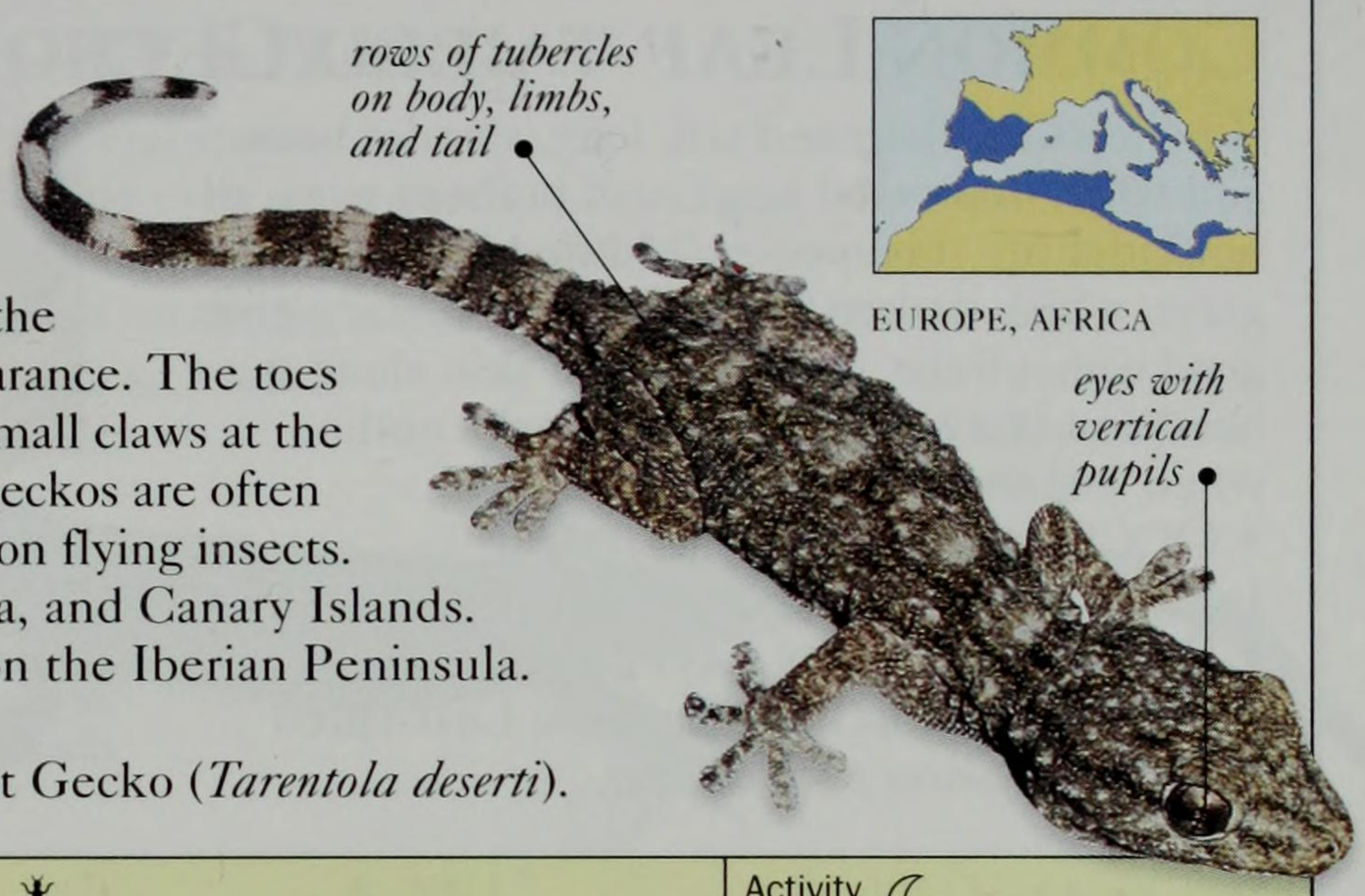
MOORISH GECKO

Europe's largest gecko, this is a robust, gray-brown species with a broad, flat body and a wide head. Several rows of tubercles running down the body, tail, and limbs give it a spiny appearance. The toes are dilated to form adhesive pads, with small claws at the tips of the third and fourth toes. These geckos are often attracted to house lights at night to feed on flying insects.

• **OCCURRENCE** S. Europe, N. Africa, and Canary Islands. In warm, dry, coastal areas, but inland on the Iberian Peninsula.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Moorish Desert Gecko (*Tarentola deserti*).



EUROPE, AFRICA

Length 4–6in (10–15cm)	Diet	Activity

Family GEKKONIDAE	Species *Teratoscincus scincus*	Status Locally common

WONDER GECKO

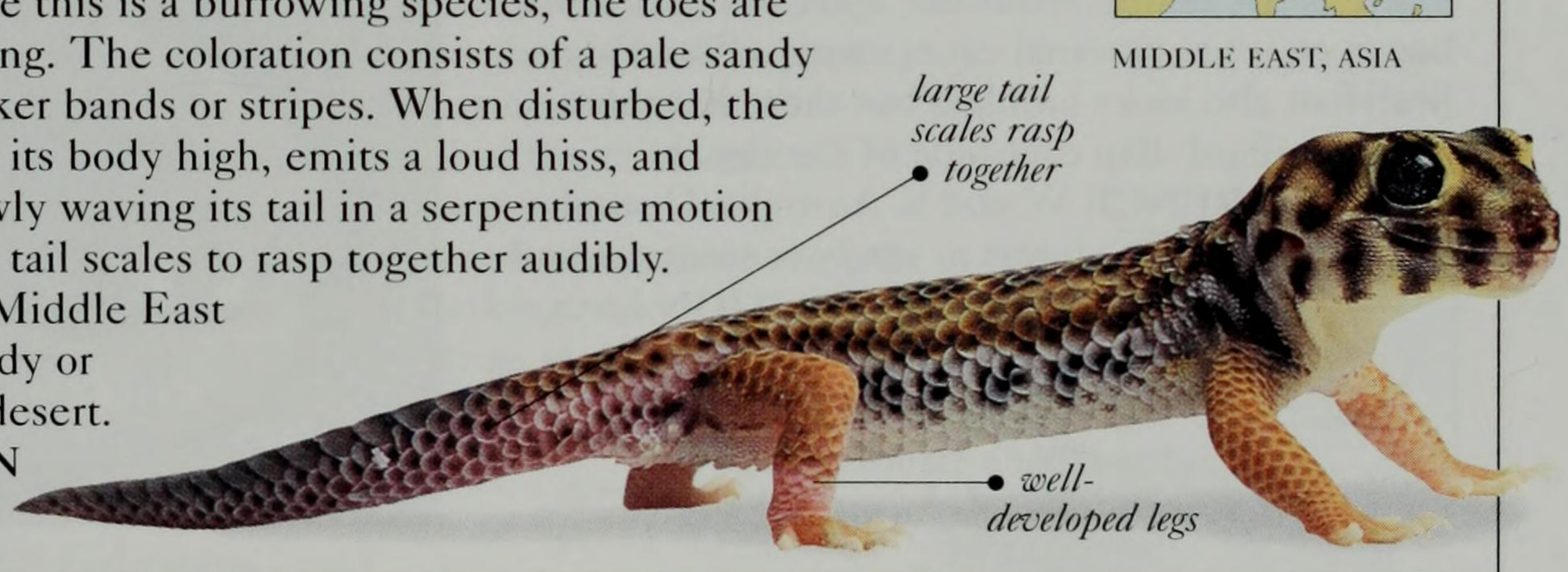
Also known as the Skink Gecko, this relatively large gecko has long legs, a cylindrical body, a large, powerful head, and protruding eyes. Since this is a burrowing species, the toes are not dilated for climbing. The coloration consists of a pale sandy background with darker bands or stripes. When disturbed, the Wonder Gecko raises its body high, emits a loud hiss, and advances to bite, slowly waving its tail in a serpentine motion and causing the large tail scales to rasp together audibly.

• **OCCURRENCE** Middle East and S.W. Asia. In sandy or clay desert and semidesert.

• **REPRODUCTION** Lays 2 eggs.



MIDDLE EAST, ASIA



Length 6–8in (15–20cm)	Diet	Activity

Family GEKKONIDAE	Species *Thecadactylus rapicauda*	Status Locally common

TURNIP-TAILED GECKO

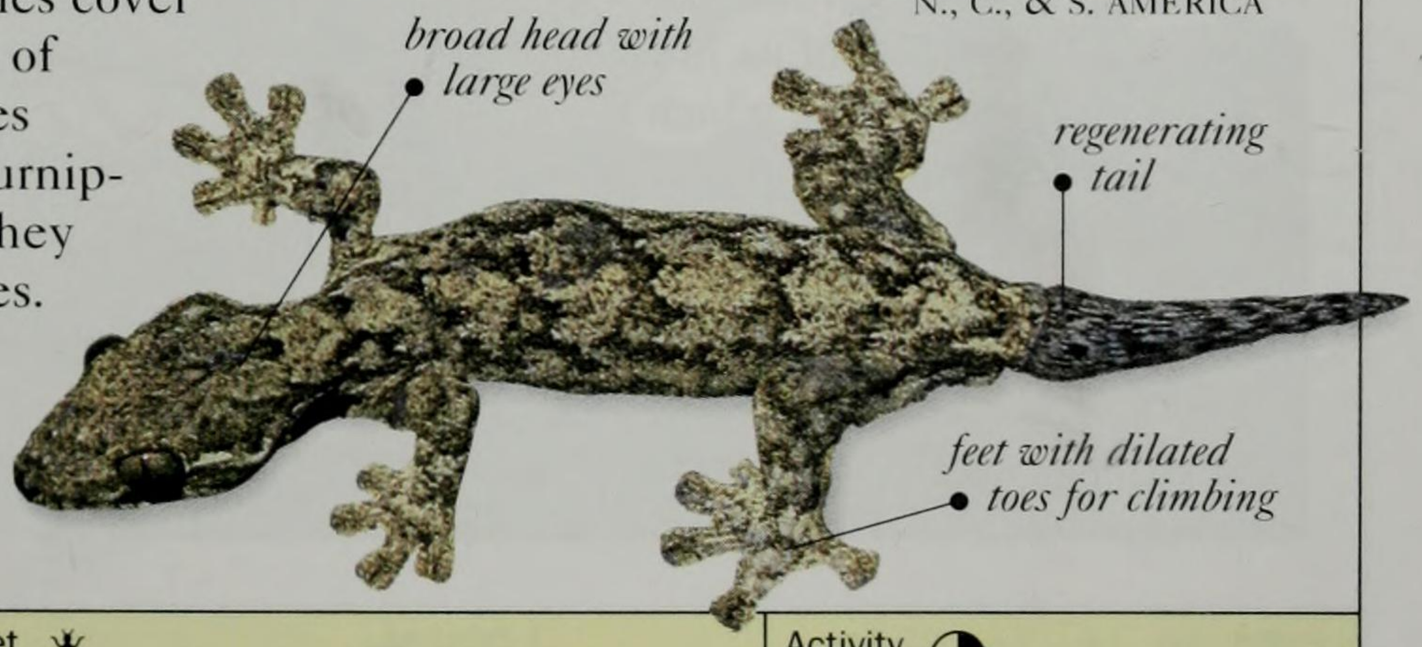
A bulbous tail gives this species its common name – although it is unusual to find specimens with complete turnip-tails, since geckos shed their tails when attacked. The broad head has large eyes with vertical pupils. Granular scales cover the body, and the overall patterning is of camouflage browns and grays. The toes end in expanded pads for climbing. Turnip-tailed Geckos can vocalize, although they call less frequently than smaller species.

• **OCCURRENCE** Mexico to N. South America, and Lesser Antilles. In rainforest and human habitations.

• **REPRODUCTION** Lays 1 egg.



N., C., & S. AMERICA



Length 5½–7in (14–18cm)	Diet	Activity

Family GEKKONIDAE	Species *Uroplatus fimbriatus*	Status Common

COMMON LEAF-TAILED GECKO

The leaflike, flattened tail, long, slender body, and large, depressed head with bulbous eyes, all help identify this species. Mottled browns and grays, which darken or lighten as necessary, give good camouflage, and a fringe of skin along the head and body breaks up the lizard's outline when it rests on a branch.

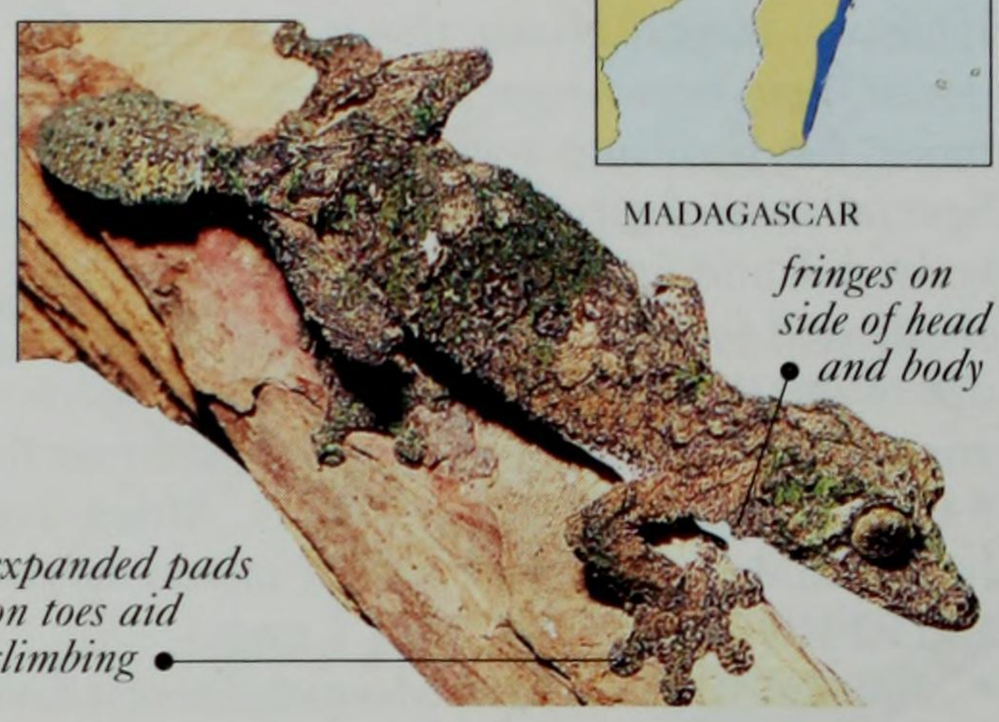
• **OCCURRENCE** E. Madagascar. In rainforest.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Fantastic Leaf-tailed Gecko (*Uroplatus phantasticus*).



MADAGASCAR



Length 8¾–12in (22–30cm)	Diet	Activity ☾

Family PYGOPODIDAE	Species *Delma fraseri*	Status Common

FRASER'S SCALYFOOT

Although it resembles a snake, this greenish brown or gray, black-barred species is a burrowing lizard. It has lidless, snakelike eyes; unlike snakes, however, it has external ear openings. Fraser's Scalyfoot also looks limbless but there is a short, scaly, hindlimb flap each side of the cloaca.

• **OCCURRENCE** W. and S. Australia. Coastal forest to sandy or stony ground.



AUSTRALIA

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Black-banded Scalyfoot (*Delma borea*).



Length 12–17½in (30–45cm)	Diet	Activity ☼

Family PYGOPODIDAE	Species *Lialis burtonis*	Status Common

BURTON'S SNAKE-LIZARD

This is the largest Australasian snake-lizard, and the most widespread. Brown or gray, it is easily distinguished from other snake-lizards by its long snout, and from true snakes by the small, scaly remnants of its hindlimbs. It preys on small lizards, which it devours using long, forcepslike jaws.

• **OCCURRENCE** Australia and S. New Guinea. In habitats ranging from wet forest to desert.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Jicar's Snake-lizard (*Lialis jicari*).



AUSTRALASIA

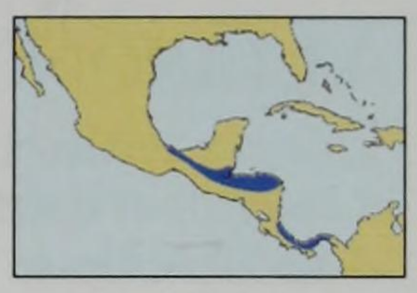


Length 20–24in (50–60cm)	Diet	Activity ☼ ☾

Family XANTUSIIDAE	Species *Lepidophyma flavimaculatum*	Status Rare

YELLOW-SPOTTED NIGHT LIZARD

This is a medium-sized, slender lizard. Several rows of raised, tuberculate scales run down the back and the eyes are covered by snakelike "spectacles." The coloration is brown or gray, with yellow spots on the sides and dark bars on the lip scales.

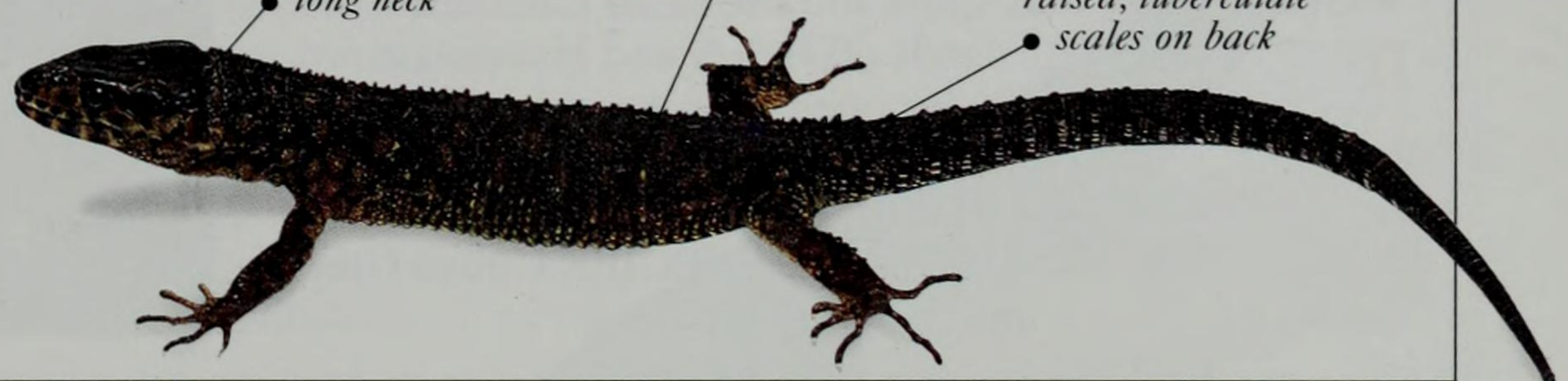


C. AMERICA

• **OCCURRENCE** Central America. In rainforest.

• **REPRODUCTION** Live-bearing, 5–6 neonates.

• **SIMILAR SPECIES** Maya Night Lizard (*Lepidophyma mayae*).



Length 8–12in (20–30cm)	Diet	Activity

Family IGUANIDAE	Species *Amblyrhynchus cristatus*	Status Locally common

GALAPAGOS MARINE IGUANA

Gray-green in color, the Galapagos Marine Iguana becomes reddish in the breeding season. Temperature also affects color: iguanas leaving the cold ocean may be almost black; they will then bask on the rocks until warmed by the sun, when they change back to their normal gray-green. Similarities to other large iguanas include the general physique and the raised dorsal crest, but the tail is more robust and flattened like a rudder for swimming against strong currents. Because they live on kelp, eaten underwater, they have glands in the nose for excreting salt. When basking, they continually expel salt in a white spray from these glands.



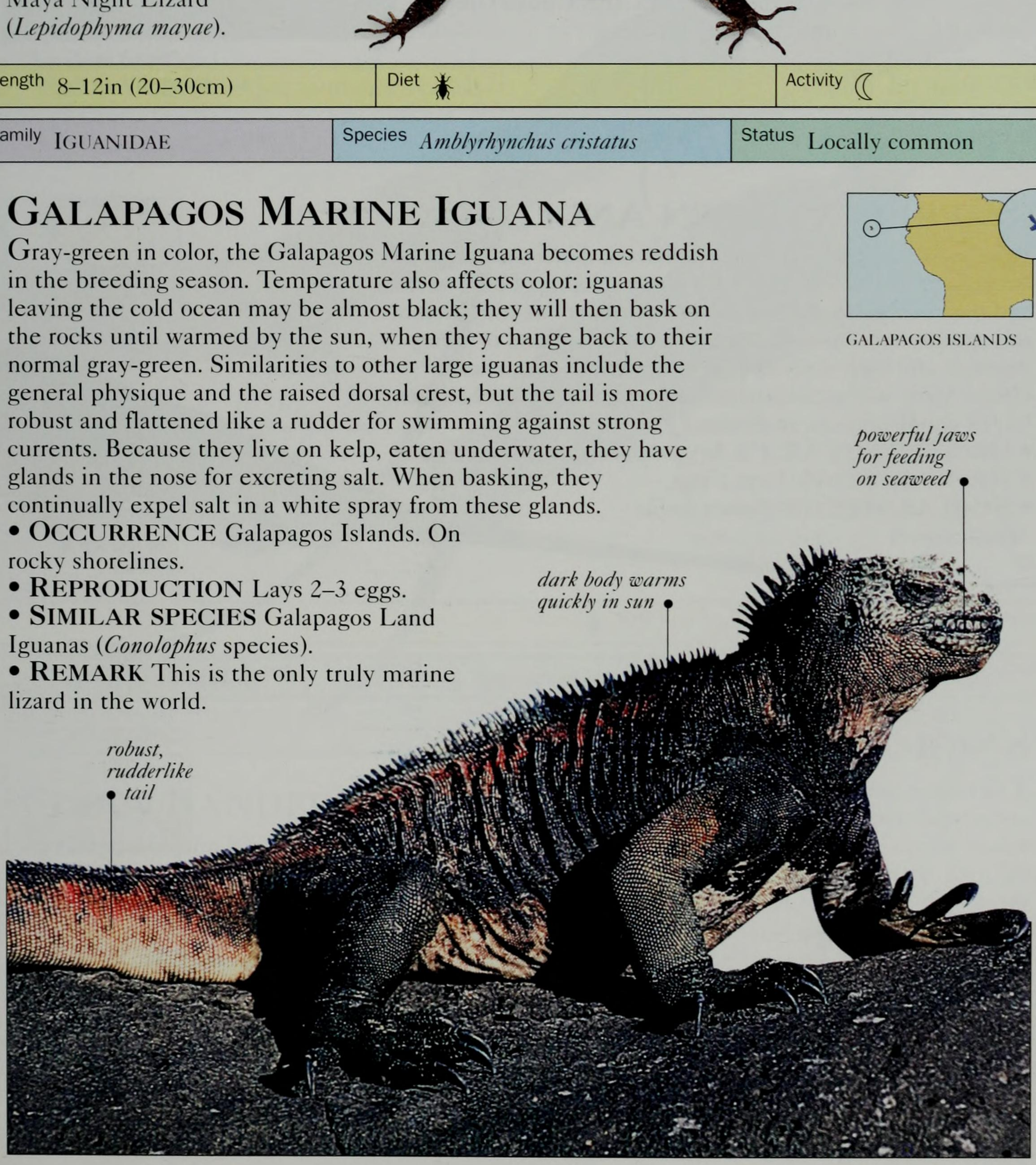
GALAPAGOS ISLANDS

• **OCCURRENCE** Galapagos Islands. On rocky shorelines.

• **REPRODUCTION** Lays 2–3 eggs.

• **SIMILAR SPECIES** Galapagos Land Iguanas (*Conolophus* species).

• **REMARK** This is the only truly marine lizard in the world.



Length 3–5½ft (1–1.7m)	Diet	Activity

Family IGUANIDAE	Species *Anolis allisoni*	Status Common

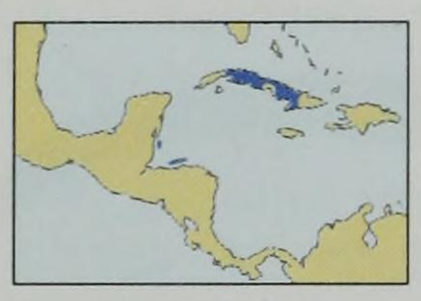
ALLISON'S ANOLE

This is a relatively stout anole, which varies in color from dark brown to bright green. Males develop an electric-blue head and thorax, while females have a light stripe along the back. In both sexes, the dewlap under the chin is dark red.

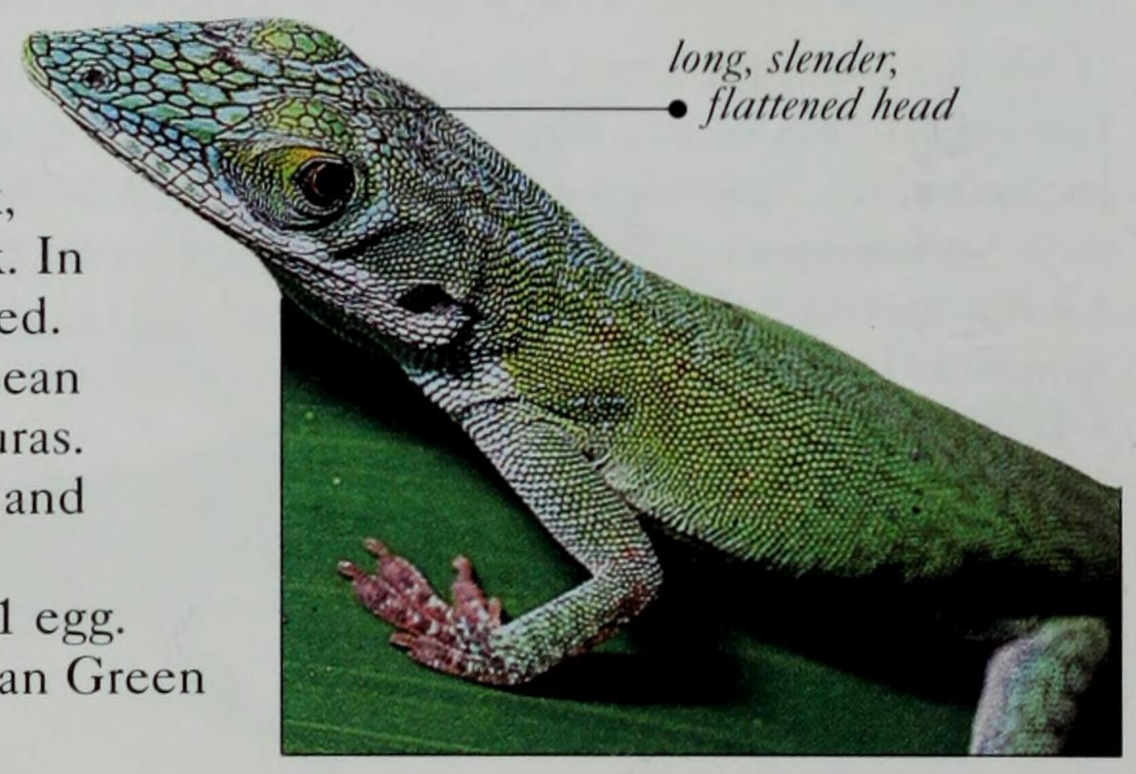
• **OCCURRENCE** Cuba and the small Caribbean islands off Belize and Honduras. In dry, open sites in gardens and on plantations.

• **REPRODUCTION** Lays 1 egg.

• **SIMILAR SPECIES** Cuban Green Anole (*Anolis porcatus*).



CARIBBEAN



Length 4–6in (10–15cm)	Diet	Activity

Family IGUANIDAE	Species *Anolis carolinensis*	Status Endangered

AMERICAN GREEN ANOLE

Also known as the American Chameleon, this is the only native anole in southeast US. The vivid green coloring of both sexes and the red dewlap of the males should make identification of this species easy, but some males have pink, white, or green dewlaps, and both sexes can change color. The American Green Anole was once common in gardens and other habitats, but its populations are in decline.

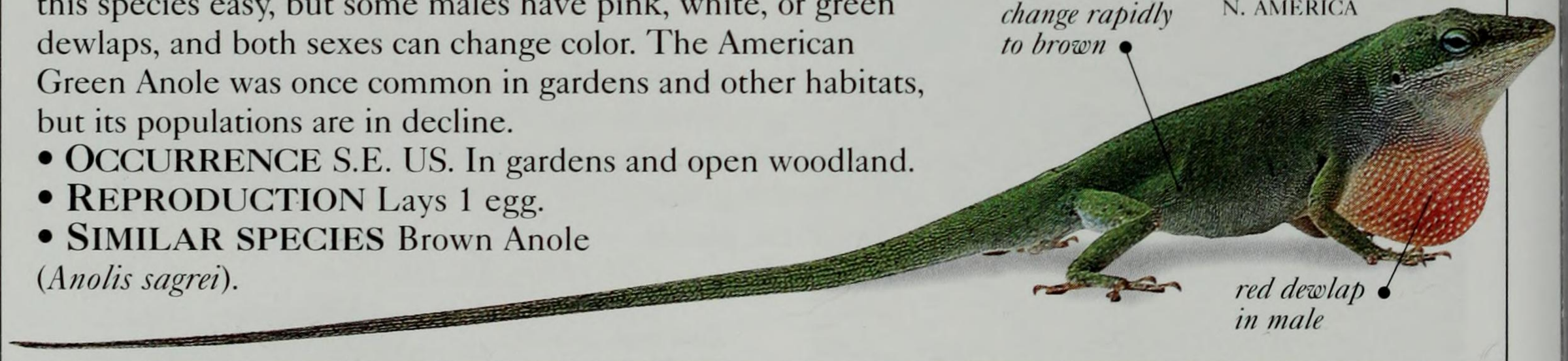
• **OCCURRENCE** S.E. US. In gardens and open woodland.

• **REPRODUCTION** Lays 1 egg.

• **SIMILAR SPECIES** Brown Anole (*Anolis sagrei*).



N. AMERICA



Length 4¾–8in (12–20cm)	Diet	Activity

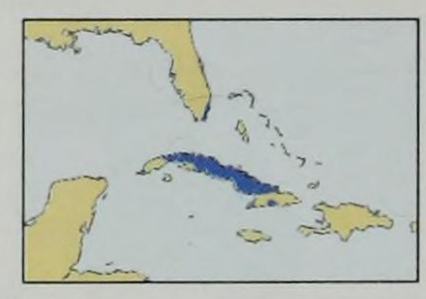
Family IGUANIDAE	Species *Anolis equestris*	Status Locally common

KNIGHT ANOLE

The largest member of its genus, the Knight Anole is bright green, occasionally brown or speckled with dark green, and it has two vivid yellow stripes under the eye and over the shoulder. The dewlap of the male is pink. The head is large and the snout is pointed. This species usually lives in palm crowns, although it is also found on other large trees. An aggressive colonizer and predator, the Knight Anole in Florida will eat the smaller Green and Brown Anoles, as well as insects and treefrogs.

• **OCCURRENCE** Cuba. (Introduced to Florida.) In large trees in forests and occasionally in open areas.

• **REPRODUCTION** Lays 2 eggs.



CUBA, N. AMERICA



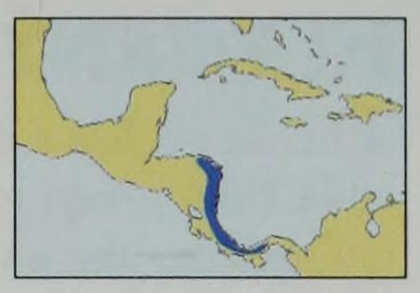
Length 13–19in (33–49cm)	Diet	Activity

Family IGUANIDAE	Species *Basilicus plumifrons*	Status Common

PLUMED BASILISK

The vivid green Plumed Basilisk is usually patterned with light blue or yellow spots. It has three large crests supported by bony spines on the head, back, and tail, and these are especially well developed in males. At night, basilisks sleep at the end of narrow twigs so that they will be alerted to the approach of predatory snakes. They escape by diving into the water below and hiding on the stream bottom.

- **OCCURRENCE** S.E. Central America. By rivers in tropical rainforest.
- **REPRODUCTION** Lays 15–20 eggs.
- **SIMILAR SPECIES** Helmeted Basilisk (*Basilicus basiliscus*).
- **REMARK** Basilisks are sometimes called Jesus Christ lizards because they run across water on their hindfeet.



C. AMERICA

eyes have bright orange iris

FEMALE

MALE

long tail aids balance when climbing or running

male has much higher crests than female

long toes with webbed edges

Length 24–28in (60–70cm)	Diet	Activity

Family IGUANIDAE	Species *Brachylophus fasciatus*	Status Endangered

FIJIAN BANDED IGUANA

At first glance, the Fijian Banded Iguana resembles a small Green Iguana (*Iguana iguana*, p.70) but with a lower dorsal crest and without the large white scale below the ear. Males are banded green and light blue, and both sexes have white throats and dewlaps, and very long tails.

- **OCCURRENCE** Fiji and Tonga. (Introduced to Vanuatu.) In rainforest.
- **REPRODUCTION** Lays 3–6 eggs.
- **SIMILAR SPECIES** Fijian Crested Iguana (*Brachylophus vitiensis*).

OCEANIA

white dewlap and throat

male has light blue cross-bands

Length 20–24in (50–60cm)	Diet	Activity

Family IGUANIDAE	Species *Corytophanes cristatus*	Status Locally common

ELEGANT HELMETED LIZARD

This lizard has a laterally compressed body that may be any color from green to tan, dark brown, or black. It changes color voluntarily, like a chameleon. The casquelike crest on the relatively small head distinguishes helmeted lizards from other lizards in tropical America. This species has long limbs but, when fleeing, it hops on its hindlegs rather than running.

• OCCURRENCE Central America. In lowland rainforest.

• REPRODUCTION Lays 6–8 eggs.

• SIMILAR SPECIES Hernandez's Helmeted Lizard (*Corytophanes hernandezii*).



C. AMERICA



Length 12–16in (30–40cm)	Diet	Activity

Family IGUANIDAE	Species *Crotaphytus collaris*	Status Common

COLLARED LIZARD

The black-and-white neck marking is a constant feature of the Collared Lizard but, apart from this, color and pattern vary considerably. The body may be green to yellow or brown, with numerous light spots. Collared Lizards are agile and alert predators of large invertebrates and smaller lizards. They also eat flowers and berries.

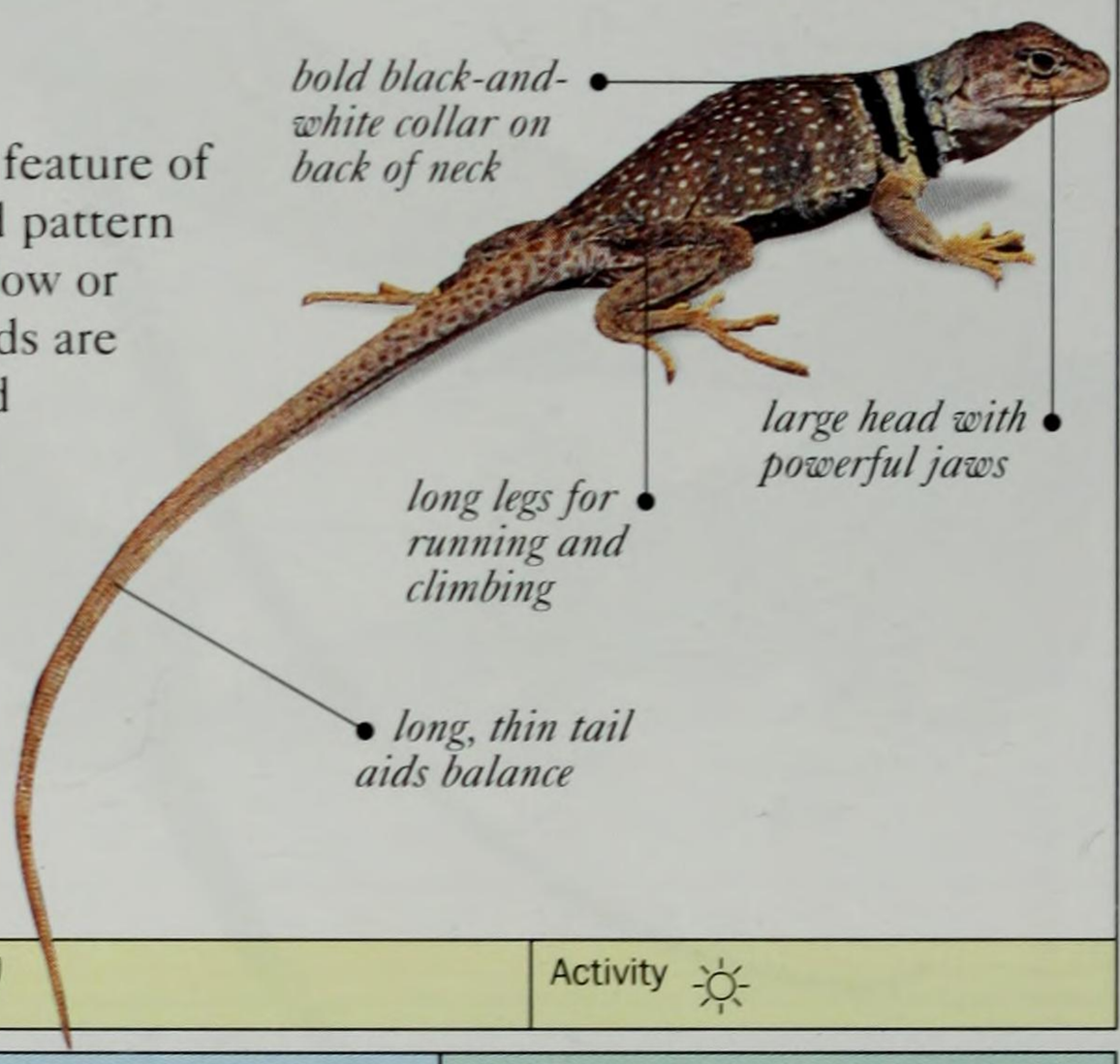
• OCCURRENCE W. North America. In semiarid habitats.



N. AMERICA

• REPRODUCTION Lays 2–11 eggs.

• SIMILAR SPECIES Reticulate Collared Lizard (*Crotaphytus reticulatus*).



Length 8–14in (20–35cm)	Diet	Activity

Family IGUANIDAE	Species *Ctenosaura similis*	Status Common

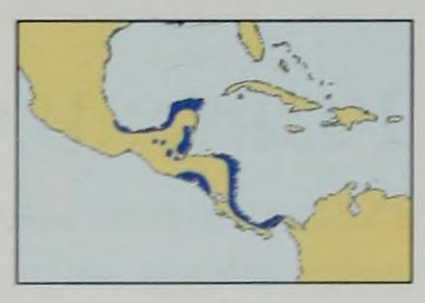
BLACK SPINYTAIL IGUANA

Sharp, spiny projections on the tail give this large lizard its common name. Hatchlings are gray-brown, but soon become bright green. As they mature they change to light gray patterned with broken, dark gray bars. Adults feed almost entirely on vegetation, but juveniles eat insects and even small lizards.

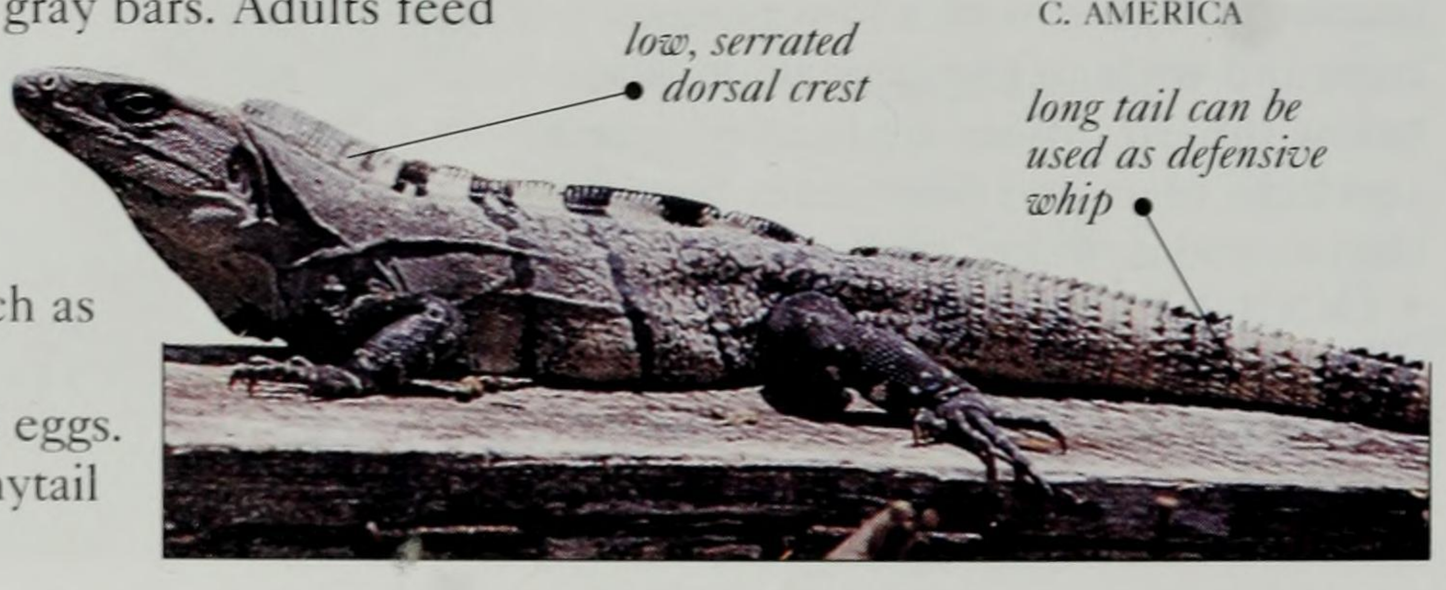
• OCCURRENCE Central America. In semiarid habitats, such as rocky shores and cleared forest.

• REPRODUCTION Lays 15–25 eggs.

• SIMILAR SPECIES Cape Spinytail Iguana (*Ctenosaura hemilopha*).



C. AMERICA



Length 2–3ft (0.7–1m)	Diet	Activity

Family IGUANIDAE	Species *Cyclura cornuta*	Status Endangered

RHINOCEROS IGUANA



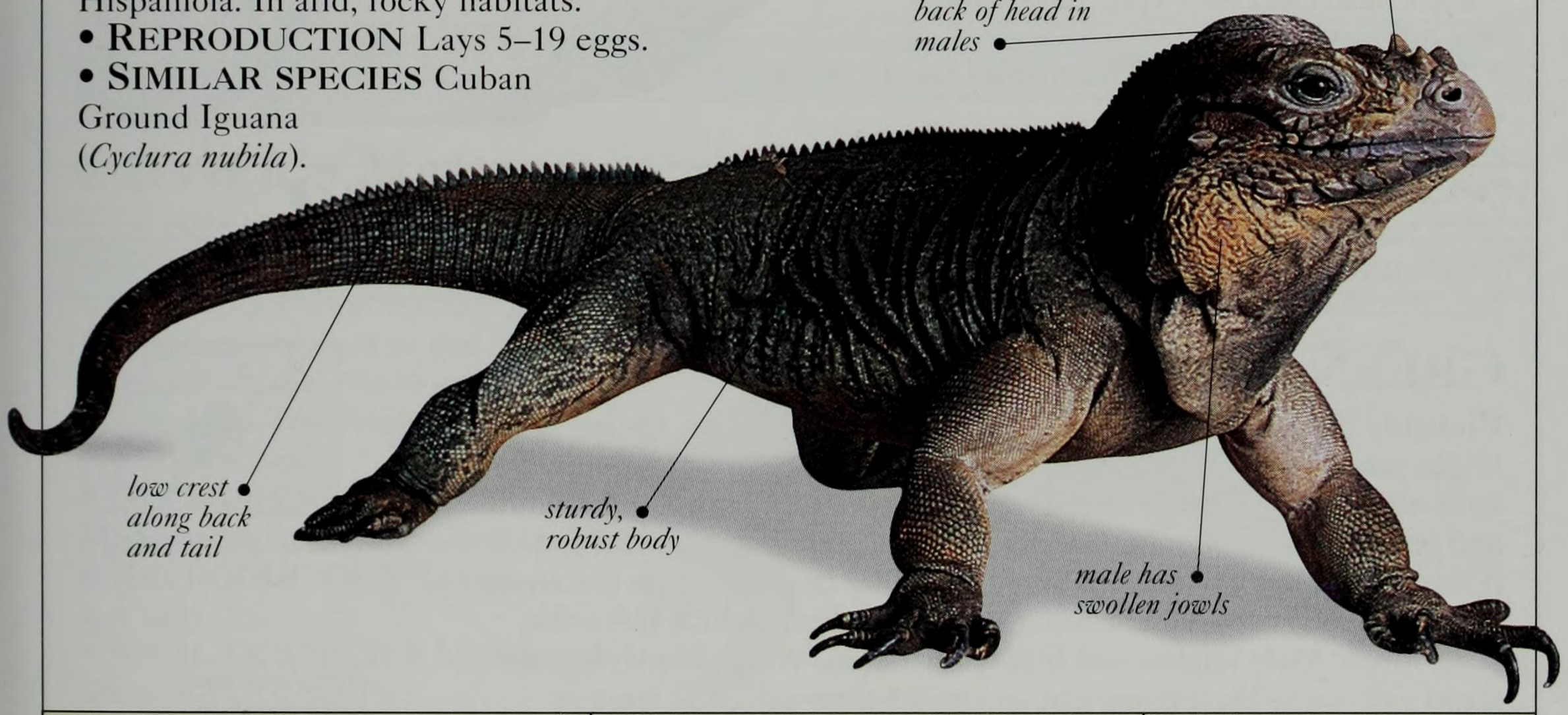
HISPANIOLA

The heavily built Rhinoceros Iguana is an imposing reptile, with a sturdy body and legs, a large head, and a strong, thick tail. Adults are almost uniformly gray, although juveniles may bear faint, pale cross-bars. The species takes it name from the three or five raised scales, similar to rhinoceros horns, in front of the eyes. These "horns" are most pronounced in the larger, bulkier males, which also have two enlarged areas at the back of the skull, and swollen jowls on the neck. Males are territorial, displaying by means of a series of head-bobs and rolls while turning their body sideways to intimidate their opponent with a large surface area. The diet of these iguanas includes the fruit and leaves of the manchineel (*Hippomane mancinella*) and poisonwood (*Metapium toxiferum*); both of these trees contain potentially toxic alkaloids, but the lizards have adapted to feed on them.

• **OCCURRENCE** Haiti and Dominican Republic, Hispaniola. In arid, rocky habitats.

• **REPRODUCTION** Lays 5–19 eggs.

• **SIMILAR SPECIES** Cuban Ground Iguana (*Cyclura nubila*).



Length 3–4ft (1–1.2m)	Diet	Activity

Family IGUANIDAE	Species *Dipsosaurus dorsalis*	Status Common

DESERT IGUANA



N. AMERICA

This stout lizard has a long tail and a small head. It has small, granular scales on the back, with a row of larger vertebral scales. The skin pattern is spotted, in grays, browns, and pinks. More tolerant of heat than other lizards, it can remain active in the hottest part of the day. It is primarily a herbivore but also eats invertebrates, carrion, and its own fecal pellets.

• **OCCURRENCE** W. North America. In semiarid scrubland and desert.

• **REPRODUCTION** Lays 3–8 eggs.

• **SIMILAR SPECIES** Blunt-nosed Leopard Lizard (*Gambelia silus*).



Length 6–12in (15–30cm)	Diet	Activity

Family IGUANIDAE	Species *Hoplocercus spinosus*	Status Rare

PRICKLE-TAIL LIZARD

With its drab coloration and patterning of reddish brown or dark brown bands alternating with light brown ones, the Prickle-tail Lizard is easily overlooked. It has an off-white nape band, but its most unusual physical attribute is its short, flat, spiny tail, which is used to block the entrance to its burrow. Unlike many other lizards, which occupy the abandoned burrows of other animals, this rare and little-known species excavates its own tubelike retreat at the base of a bush. At dusk, it emerges to hunt ants and termites, as well as larger invertebrates, such as scorpions.

• **OCCURRENCE** C. South America. In dry savanna woodland.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Thornytail Lizard (*Uracentron azureum*).



S. AMERICA



Length 4¾–6in (12–15cm)	Diet	Activity

Family IGUANIDAE	Species *Iguana iguana*	Status Common

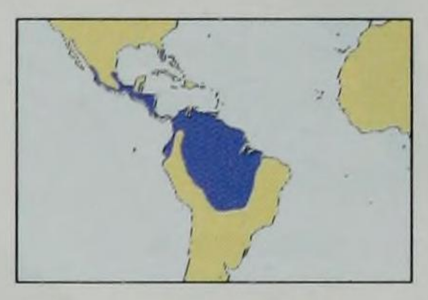
GREEN IGUANA

Probably the best-known lizard in the world, the Green Iguana is bright green with blue markings as a juvenile and becomes more drab with maturity. Dominant males often develop bright orange forelimbs and pale heads. There are two subspecies: *Iguana iguana rhinolopha* (Central America), which has small, hornlike projections on the snout; and *I. iguana iguana* (South America), shown here, which lacks the projections. Male iguanas are highly territorial. When displaying, they stand side-on to their opponent and make themselves as large as possible by standing tall, while bobbing their heads and waving their dewlaps. The long tail is used defensively as a powerful whip; for propelling the body when swimming; and for escape (the tail is shed if it is seized). Although primarily herbivorous as adults, insects form part of the diet of juveniles and subadults.

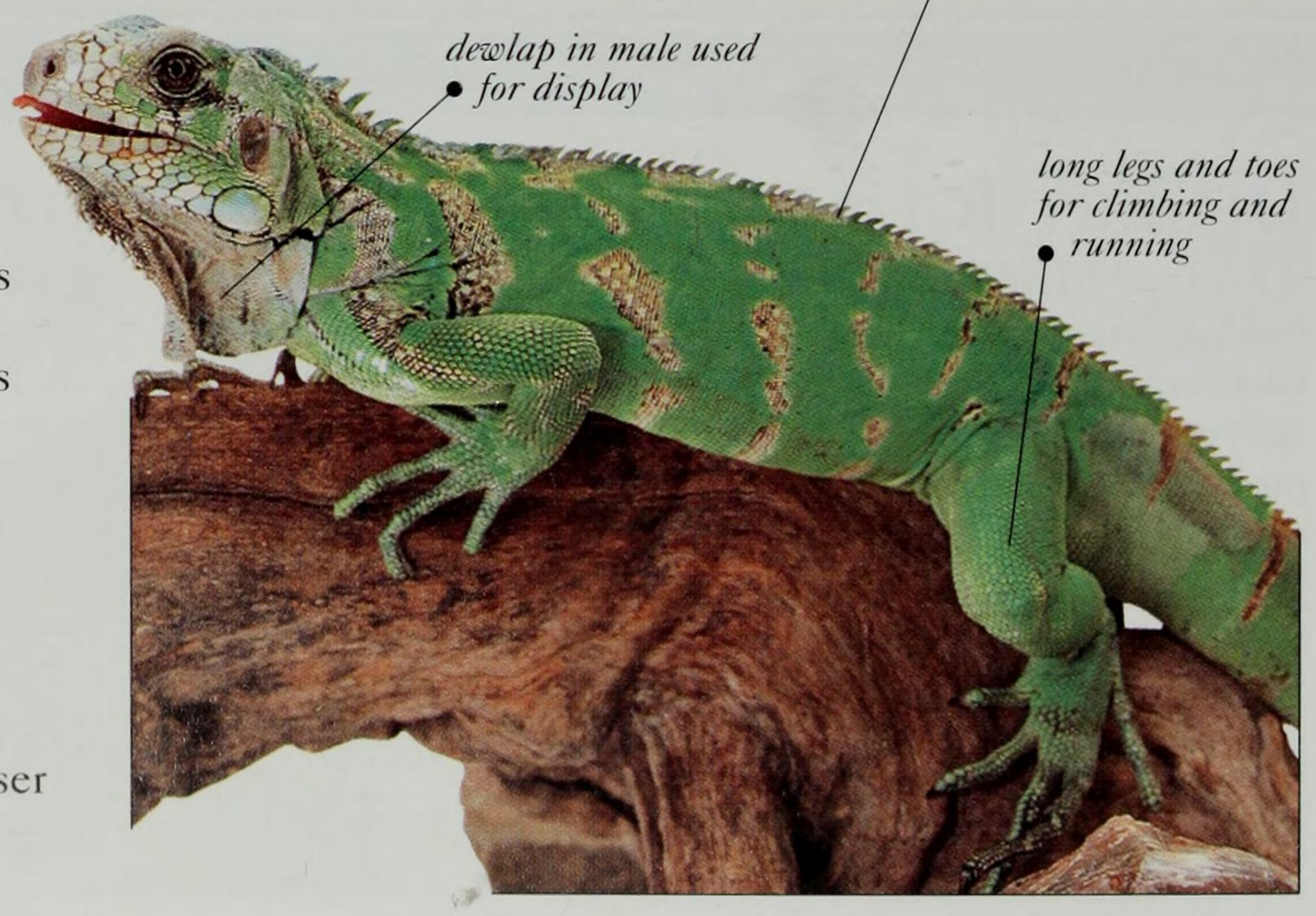
• **OCCURRENCE** Mexico to South America. In riverine forest.

• **REPRODUCTION** Lays 20–40 eggs.

• **SIMILAR SPECIES** Lesser Antillean Green Iguana (*I. delicatissima*).



N., C., & S. AMERICA



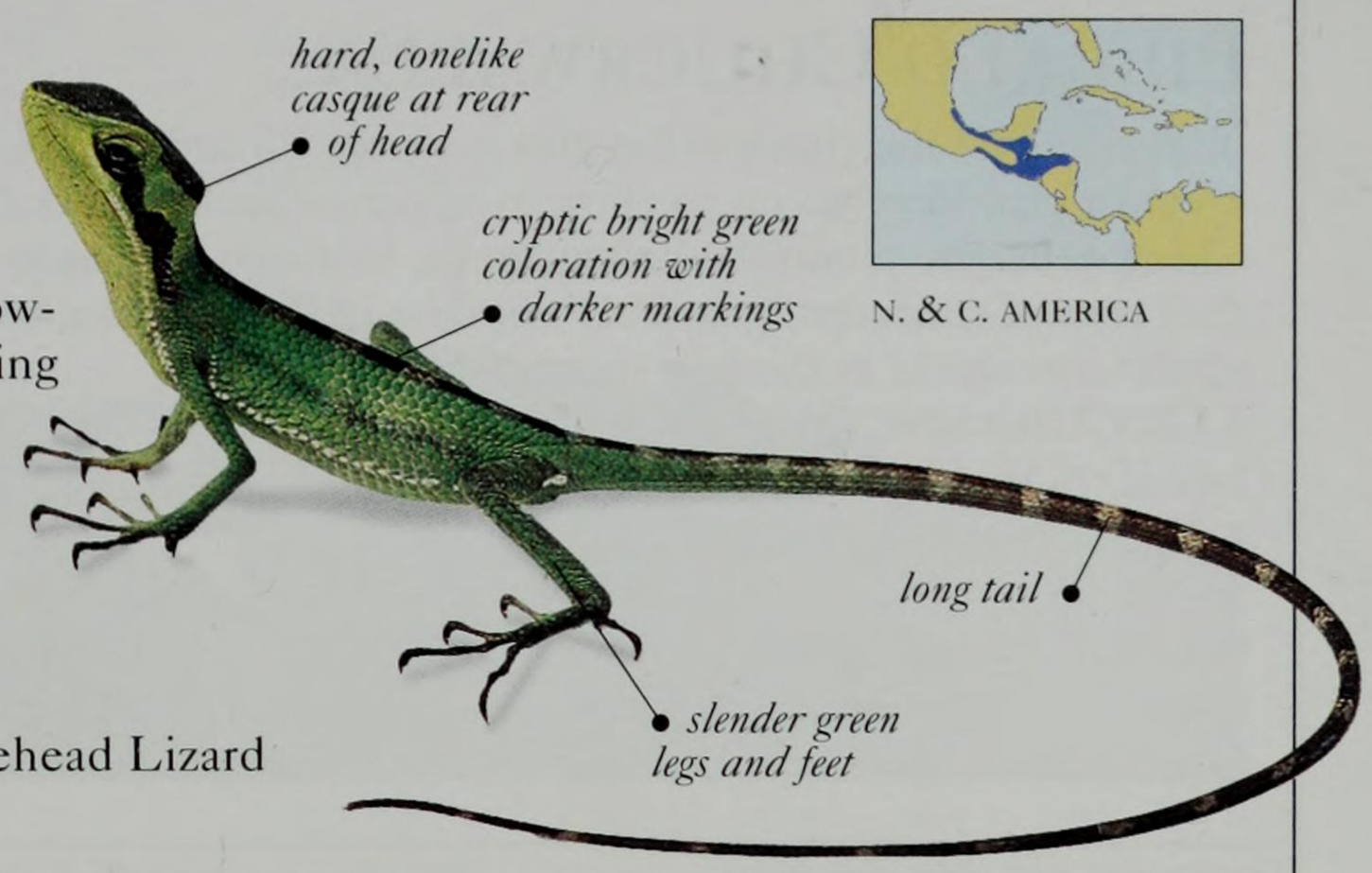
Length 5–6½ft (1.5–2m)	Diet	Activity

Family IGUANIDAE	Species *Laemanctus longipes*	Status Rare

CONEHEAD LIZARD

The Conehead Lizard is a rare inhabitant of tropical forest. The body is bright green, with dark green and black markings. The head is yellow-green, with a cream-green stripe running from the lips to the shoulders, and with a highly distinctive, conelike casque at the rear.

- **OCCURRENCE** Mexico to Honduras. In lowland rainforest.
- **REPRODUCTION** Lays 3–4 eggs.
- **SIMILAR SPECIES** Serrated Conehead Lizard (*Laemanctus serratus*).



N. & C. AMERICA

Length 16–28in (40–70cm)	Diet	Activity

Family IGUANIDAE	Species *Oplurus cuvieri*	Status Common

CUVIER'S MADAGASCAN TREE SWIFT

This agile lizard is red-brown, with a series of broad, light-edged, dark bars running across the back. Unlike most other Madagascan swifts, which are rock-dwellers, this arboreal inhabitant possesses a spiny tail. The spines alternate in size, distinguishing this species from the otherwise similar Madagascan Tree Swift (*Oplurus cyclurus*).

- **OCCURRENCE** Madagascar. In dry woodland.
- **REPRODUCTION** Lays 4–6 eggs.
- **SIMILAR SPECIES** Madagascan Tree Swift (*O. cyclurus*).



MADAGASCAR



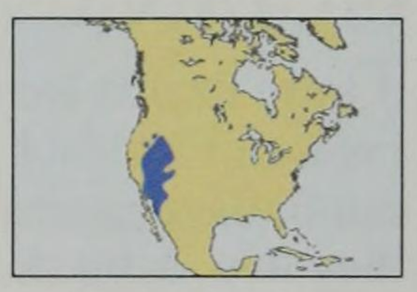
Length 12–14½in (30–37cm)	Diet	Activity

Family IGUANIDAE	Species *Phrynosoma platyrhinos*	Status Common

DESERT HORNED LIZARD

Commonly misnamed "horned toads," these lizards are squat and rounded, with a crest of horns and a single row of scales along the sides and across the throat. They are usually tan, beige, or gray, with markings that resemble pebbles in shape and color. This lizard only eats ants.

- **OCCURRENCE** S.W. North America. In sandy desert.
- **REPRODUCTION** Lays 2–16 eggs.
- **SIMILAR SPECIES** Coast Horned Lizard (*Phrynosoma coronatum*).



N. AMERICA

Length 3¼–4¼in (8–11cm)	Diet	Activity

Family IGUANIDAE	Species *Sauromalus varius*	Status Endangered

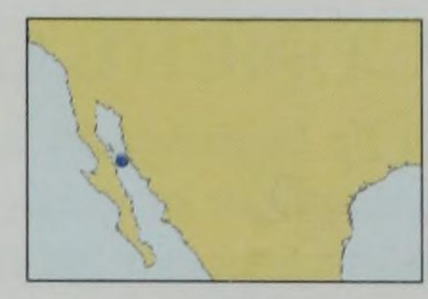
PIEBALD CHUCKWALLA

The largest of the chuckwallas, this is a stocky lizard with irregular gray blotches on a yellow to off-white background. Chuckwallas are plump-bodied iguanids, although they lack the crests of rainforest iguanas. They bask in the morning, but retreat into shade as the heat intensifies.

• **OCCURRENCE** San Esteban Island, N.W. Mexico. In cactus scrub.

• **REPRODUCTION** Lays 15–22 eggs.

• **SIMILAR SPECIES** Common Chuckwalla (*Sauromalus obesus*).



N. AMERICA



Length 20–24in (50–60cm)	Diet	Activity

Family IGUANIDAE	Species *Sceloporus occidentalis*	Status Common

WESTERN FENCE LIZARD

This spiny lizard is usually patterned with gray or brown blotches. It has orange markings under the limbs and blue patches low on the sides of the body. Males also have patches of blue under the throat. The lizards often occur close to human habitations, on fences, logs, or piles of wood, hence the common name. Extremely alert and active, they are also known as "swifts" because of their speed.

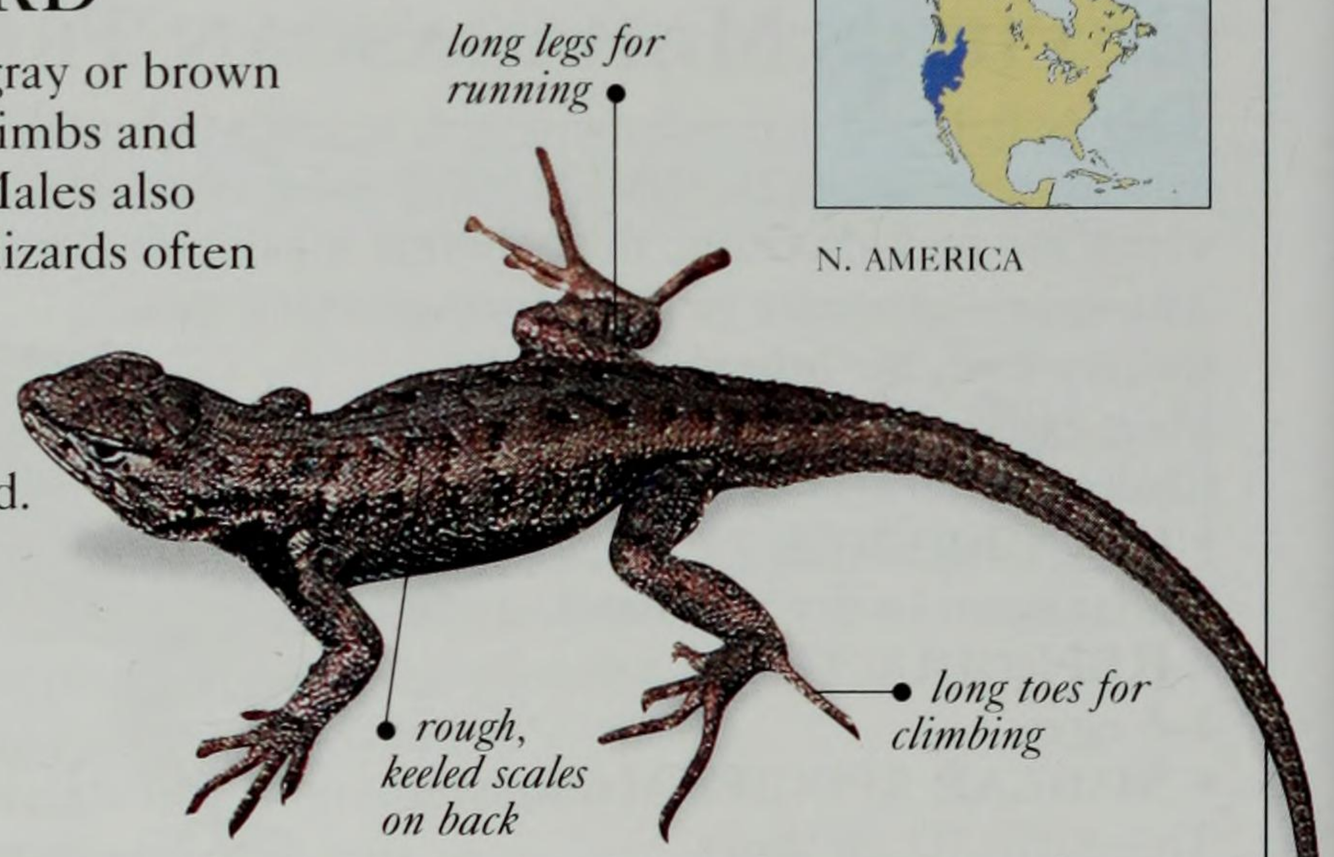
• **OCCURRENCE** W. North America. In most habitats except desert.

• **REPRODUCTION** Lays 3–17 eggs.

• **SIMILAR SPECIES** Sagebrush Lizard (*Sceloporus graciosus*).



N. AMERICA



Length 2½–3½in (6–9cm)	Diet	Activity

Family IGUANIDAE	Species *Tropidurus hispidus*	Status Common

GUIANAN LAVA LIZARD

These lizards are dark brown or sometimes even almost black, and this provides camouflage against the dark rocks upon which they live. A black collar is visible on the neck of paler individuals. Territorial displays consist of a series of what look like push-ups and head-bobs. Females may lay three clutches of eggs each year.

• **OCCURRENCE** N.E. South America. In savanna and rocky, riverside habitats.

• **REPRODUCTION** Lays 4–6 eggs.

• **SIMILAR SPECIES** Brazilian Lava Lizard (*Tropidurus oreadicus*).



S. AMERICA



Length 5–7in (13–18cm)	Diet	Activity

Family IGUANIDAE	Species *Tropidurus plica*	Status Common

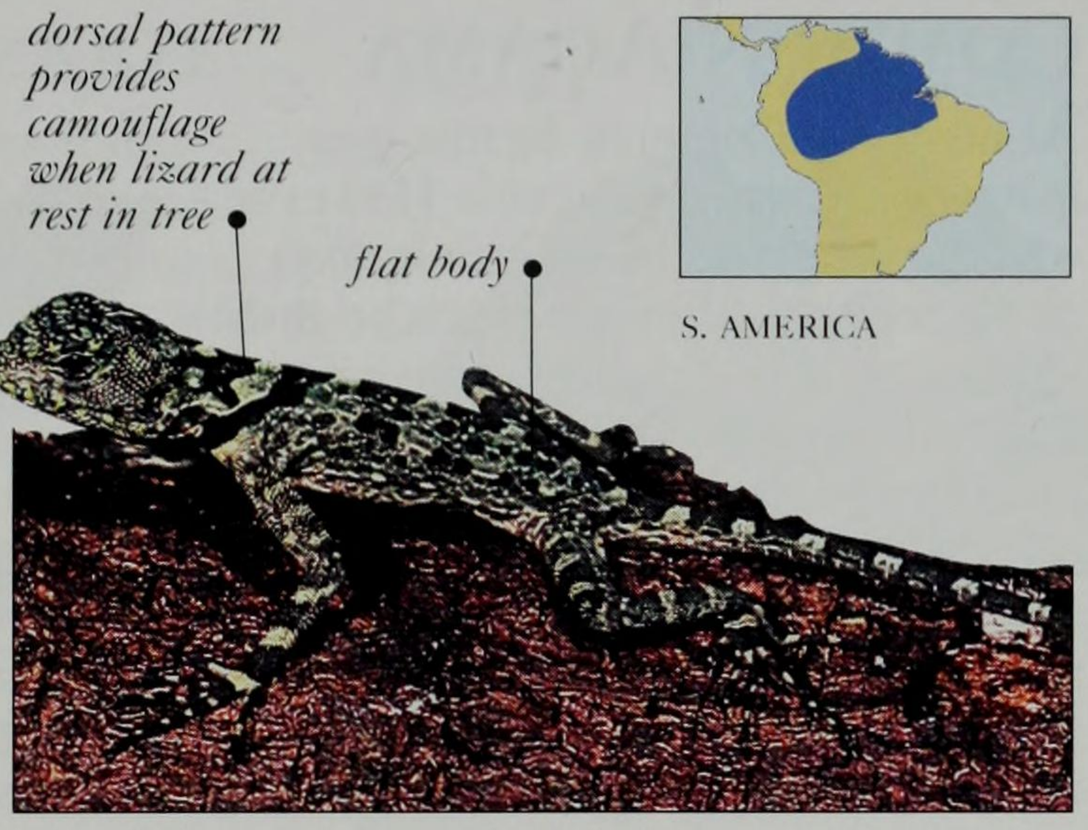
TREE RACERUNNER

Most often seen in pairs on the shaded side of tree trunks, this species is extremely flat and moves rapidly on long, slender legs in pursuit of tree ants, its main prey. The head is short, the eyes large, and the tail long and slender. A gray-green body and irregular, V-shaped black cross-bands provide camouflage.

• **OCCURRENCE** N. South America. In rainforest.

• **REPRODUCTION** Lays 2–4 eggs.

• **SIMILAR SPECIES** Racerunner (*Tropidurus umbra*).



S. AMERICA

Length 12–16in (30–40cm)	Diet	Activity

Family IGUANIDAE	Species *Uranoscodon superciliosus*	Status Common

MOP-HEADED LIZARD

This is a secretive, creek-dwelling lizard, with mottled olive-green to brown coloration. It has long legs and tail, a long, slender body, and a short, sturdy head. A long, low crest runs from the nape of the neck to the tail. When disturbed or threatened, the Mop-headed Lizard will sprint across the water without breaking the surface, or dive to the bottom to hide under submerged debris.

• **OCCURRENCE** N. South America. On shady, low vegetation, vines, and trees along rainforest creeks.

• **REPRODUCTION** Lays 3–12 eggs.



S. AMERICA

Length 12–17½in (30–45cm)	Diet	Activity

Family IGUANIDAE	Species *Uta tumidarostra*	Status Locally common

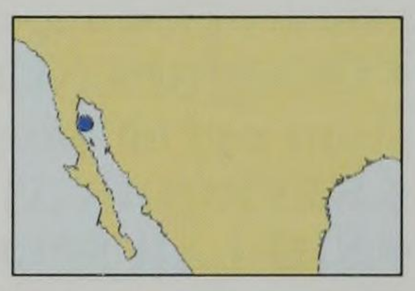
SWOLLEN-NOSED SIDE-BLOTCHED LIZARD

The most salt-tolerant lizard in the world, this species has evolved to feed on a marine isopod – the only invertebrate on its island home. It has bulbous glands in its nasal cavities, through which it expels excess salt as fine crystalline clouds. Its body is dark gray with paler spots and sides; the underside is blue-gray.

• **OCCURRENCE** Isla Coloradito, Sea of Cortez, N.W. Mexico. In the splash zone.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Side-blotched Lizard (*Uta stansburiana*).



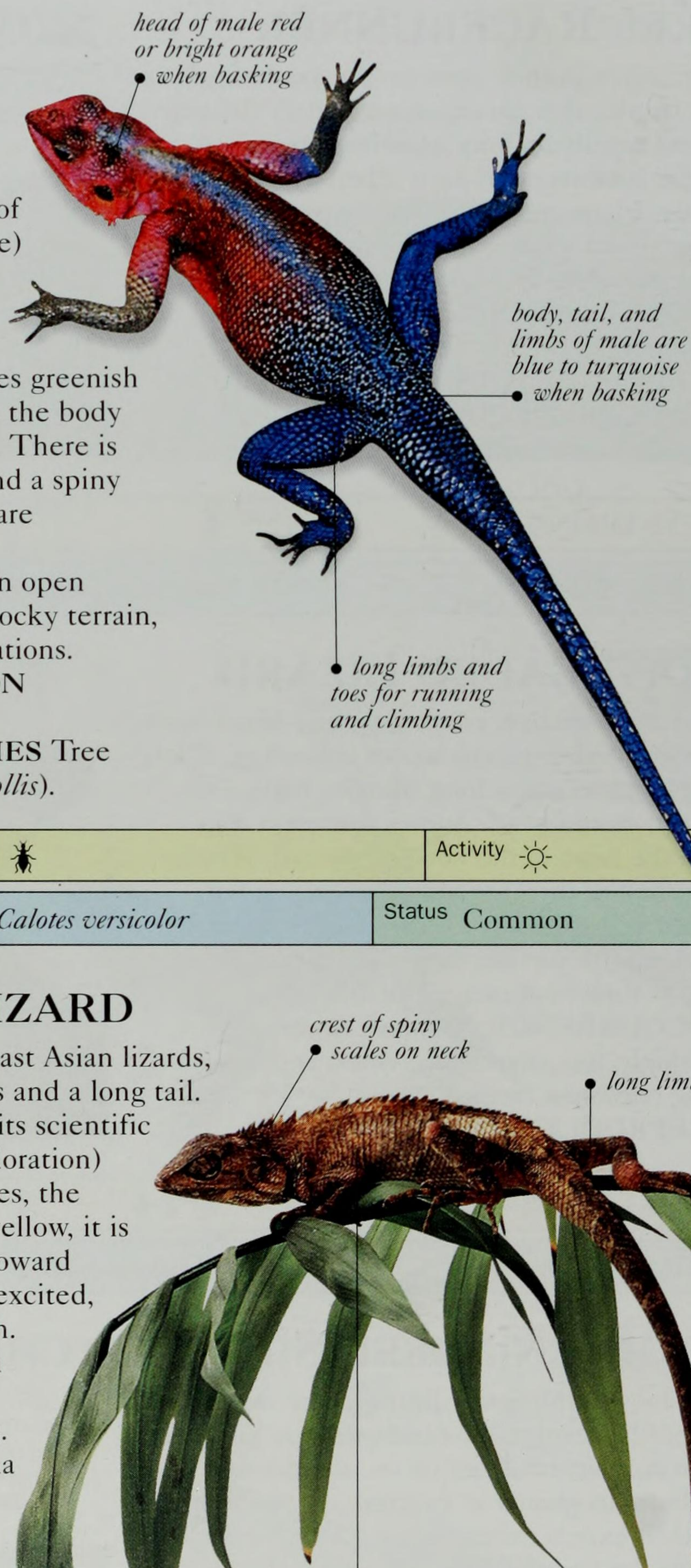
N. AMERICA



Length 5–6in (13–15cm)	Diet	Activity

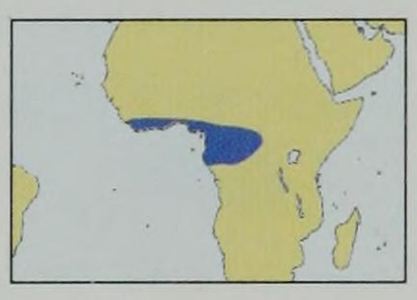
Family AGAMIDAE	Species *Agama agama*	Status Common

COMMON AGAMA



At night the Common Agama is an insignificant drab gray color. However, when it warms up in the sun it takes on an entirely different, much brighter coloration, hence the alternative name of Rainbow Agama. The male (shown here) in particular develops a stunning combination of an orange or red head and purple or blue limbs and sides spotted with yellow; the female becomes greenish yellow. The head is triangular in shape, the body is stout, and the tail and limbs are long. There is a small crest on the nape of the neck and a spiny flap around the ears, but these agamas are otherwise relatively unadorned.

• **OCCURRENCE** W. and C. Africa. In open habitats, usually in rocky terrain, and in human habitations.



AFRICA

• **REPRODUCTION** Lays 3–8 eggs.

• **SIMILAR SPECIES** Tree Agama (*Agama atricollis*).

Length 12–16in (30–40cm)	Diet	Activity

Family AGAMIDAE	Species *Calotes versicolor*	Status Common

COMMON GARDEN LIZARD



One of the most common of all Southeast Asian lizards, this is a slender species, with fine limbs and a long tail. Its patterning is highly variable, hence its scientific name *versicolor* (meaning of variable coloration) and one of its alternative common names, the Varied Lizard. Usually gray, brown, or yellow, it is capable of considerable color changes toward green, black, or red. When the male is excited, a flush of red appears around the mouth.

• **OCCURRENCE** S.E. Asia. On open plains and hillsides, and in gardens.

• **REPRODUCTION** Lays 10–25 eggs.

• **SIMILAR SPECIES** Sawback Agama (*Calotes calotes*).

• **REMARK** This species is sometimes known as the "Bloodsucker." Since it feeds on small insects (mainly ants) rather than blood, the name may refer to the red markings around the mouth of the male.



ASIA

Length 12–16in (30–40cm)	Diet	Activity

Family AGAMIDAE	Species *Chlamydosaurus kingii*	Status Locally common

AUSTRALIAN FRILLED LIZARD

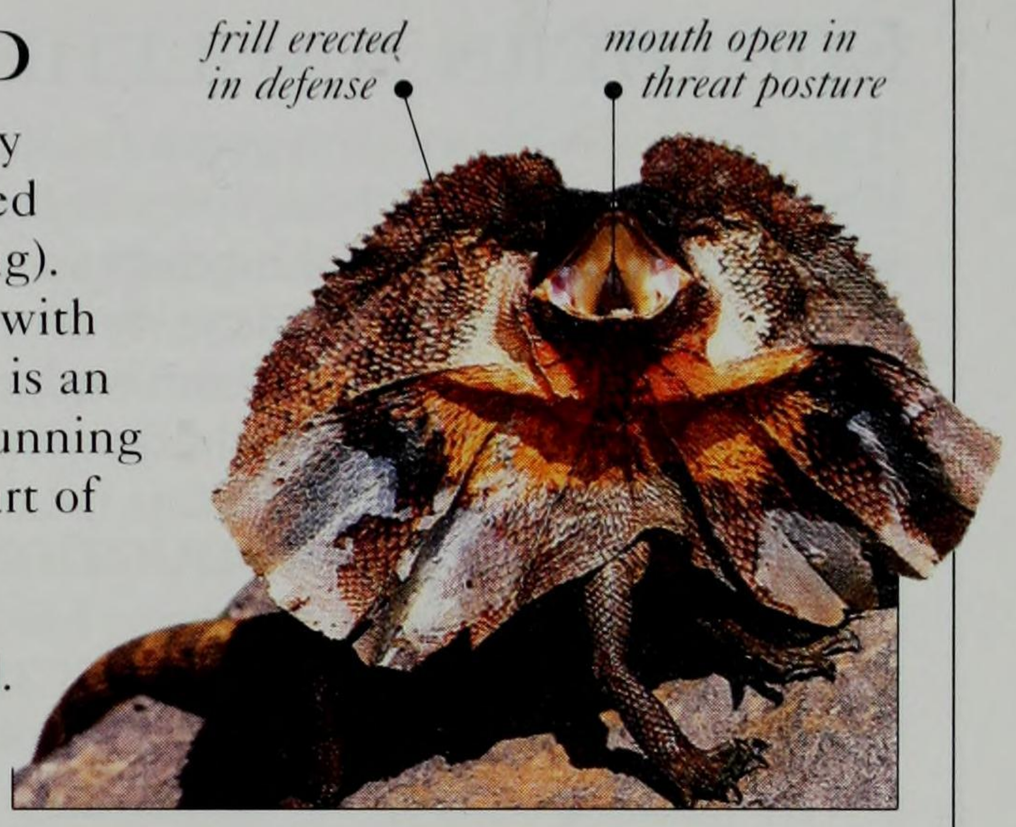
The most unusual characteristic of this lizard is its ability to suddenly erect an enormous "parasol" when threatened (this is accompanied by body posturing and mouth gaping). The coloration may be orange to brown to almost black, with a sudden, startling flash of color appearing on the frill. It is an arboreal species and escapes to the trees if confronted, running away on its hindlegs with the front part of the body raised off the ground.



AUSTRALASIA

• **OCCURRENCE** N. Australia and S. New Guinea. In savanna woodland.

• **REPRODUCTION** Lays 10–13 eggs.



Length 24–35in (60–90cm)	Diet	Activity

Family AGAMIDAE	Species *Draco volans*	Status Common

COMMON FLYING DRAGON

A pair of lateral "wings" enables this small, slender lizard to glide from one tree to another. Its coloration may be various shades of gray-brown; the wings are patterned orange and black. The small dewlap under the chin is yellow in the male (shown here) and blue in the female.

• **OCCURRENCE** S.E. Asia. In rainforest.



ASIA

• **REPRODUCTION** Lays 2–5 eggs.

• **SIMILAR SPECIES** Thai Flying Dragon (*Draco taeniopterus*).



Length 6–8in (15–20cm)	Diet	Activity

Family AGAMIDAE	Species *Hydrosaurus pustulatus*	Status Common

PHILIPPINE SAILFIN LIZARD

This uniform gray lizard is noted for its large, raised, saillike tail (this "sailfin" is larger and higher in adults than in juveniles, shown here). A row of enlarged spines is also present down the center of the back.

• **OCCURRENCE** Philippines. In forest, along rivers and streams.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Common Sailfin Lizard (*Hydrosaurus amboinensis*).

PHILIPPINES



Length 2½–3ft (0.8–1m)	Diet	Activity

Family AGAMIDAE	Species *Hypsilurus spinipes*	Status Rare

SOUTHERN ANGLEHEAD DRAGON

This species is brown with green flecking and irregular black bars down the center of the back and tail. It has an enlarged, rounded, spiny crest on the rear of the head and a low crest down the center of the back. The limbs also bear short spines. All the scales are keeled. The head is large and wedge-shaped.

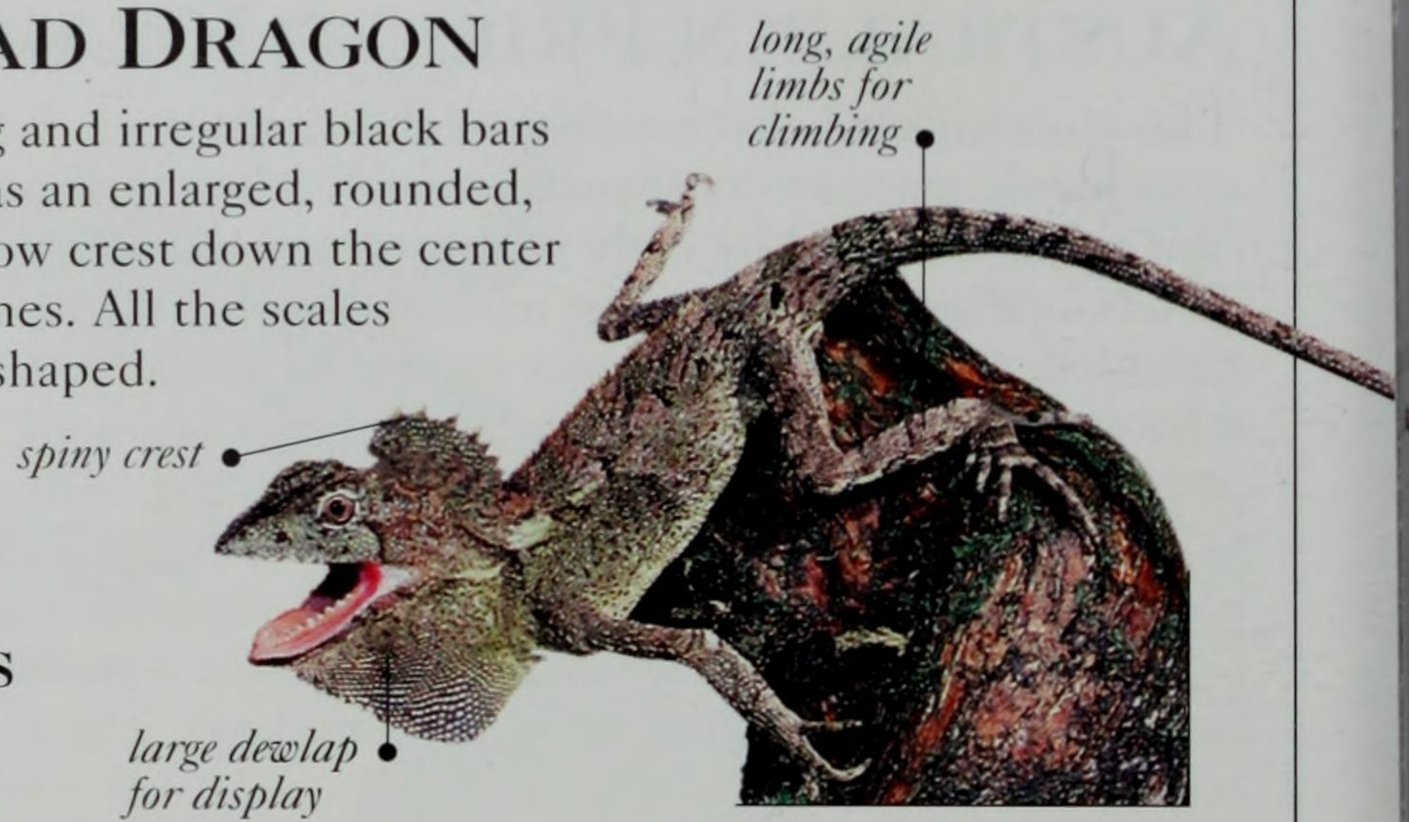
• **OCCURRENCE** S.E. Australia. In rainforest.



AUSTRALIA

• **REPRODUCTION** Lays 3–6 eggs.

• **SIMILAR SPECIES** Boyd's Forest Dragon (*Hypsilurus boydii*).



Length 8–12in (20–30cm)	Diet	Activity

Family AGAMIDAE	Species *Moloch horridus*	Status Rare

THORNY DEVIL

One of Australia's most unusual-looking lizards, the Thorny Devil has a squat, flattened body that is covered in large spines, which give it the appearance of a cactus. The largest pair of spines are positioned directly above the eyes, and a curious spiny hump is present on the back of the neck. The Thorny Devil is dark red-brown, with irregular, longitudinal, light tan stripes along the head and body.

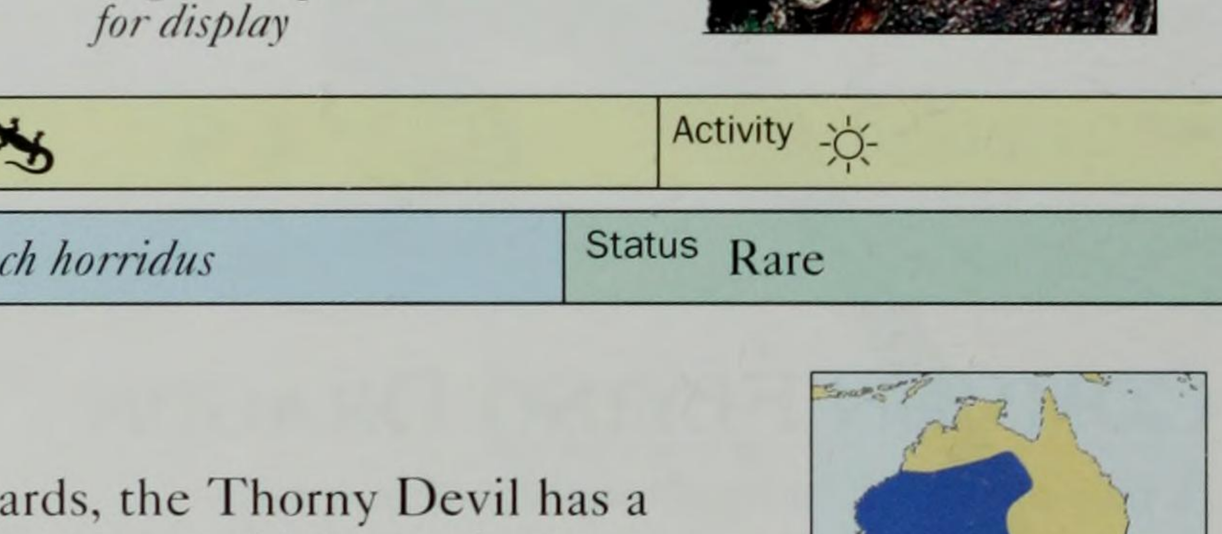


AUSTRALIA

• **OCCURRENCE** W. and C. Australia. In desert.

• **REPRODUCTION** Lays 3–10 eggs.

• **SIMILAR SPECIES** American horned lizards (*Phrynosoma* species, p.71).



Length 6–7in (15–18cm)	Diet	Activity

Family AGAMIDAE	Species *Physignathus cocincinus*	Status Locally common

GREEN WATER DRAGON

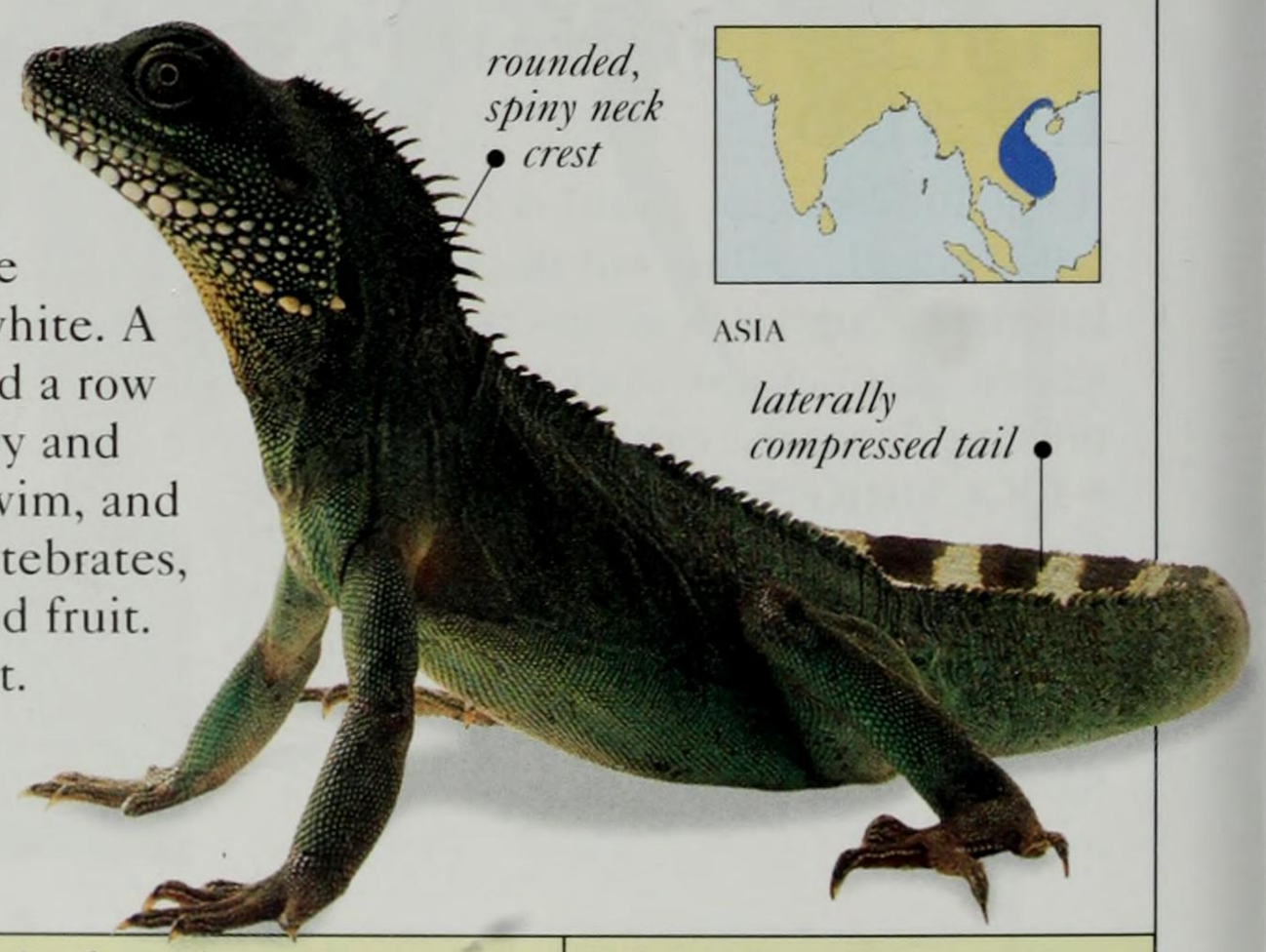
The Green Water Dragon may be various shades of green to olive-brown. The laterally compressed tail is banded with black-and-white rings, and the enlarged scales on the chin are white. A rounded, spiny crest is present on the neck, and a row of enlarged vertebral spines runs along the body and front part of the tail. This species can climb, swim, and dive with ease. Its diet consists mainly of invertebrates, but it also eats frogs, small lizards and birds, and fruit.

• **OCCURRENCE** S.E. Asia. In riverine forest.

• **REPRODUCTION** Lays 8–12 eggs.

• **SIMILAR SPECIES** Brown Water Dragon (*Physignathus lesueuri*).

ASIA



Length 2½–3ft (0.8–1m)	Diet	Activity

Family AGAMIDAE	Species *Pogona vitticeps*	Status Common

CENTRAL BEARDED DRAGON



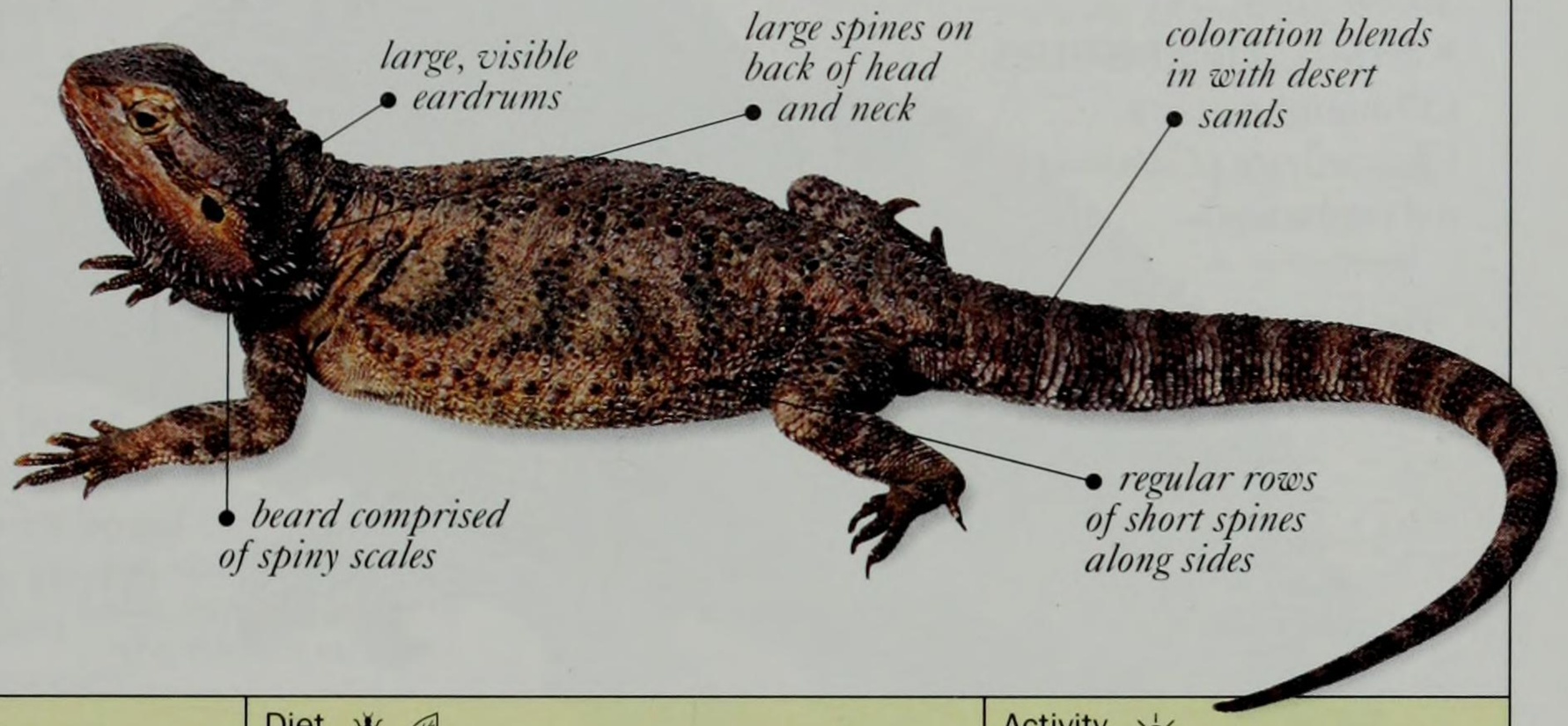
AUSTRALIA

The Central Bearded Dragon is a relatively flat lizard and may be any color from yellow to tan to red-brown, with faint darker markings. The back and nape of the neck are covered in spiny scales. When threatened, this lizard displays by opening its mouth and puffing out the spiny throat beard after which it is named. This bearded dragon is distinguished from other *Pogona* species by the presence of a single, regular row of enlarged conical spines along the side of the body (between the limbs) and a fringe of enlarged spiny scales across the center of the throat. Common in dry habitats, the Central Bearded Dragon is frequently observed perched on fence posts or dead tree trunks, or foraging for insects in the bark.

• **OCCURRENCE** E. central Australia. In dry forest and desert.

• **REPRODUCTION** Lays 11–16 eggs.

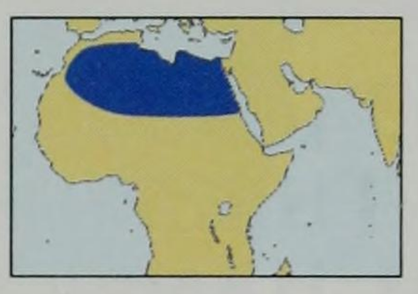
• **SIMILAR SPECIES** Eastern Bearded Dragon (*Pogona barbata*).



Length 12–20in (30–50cm)	Diet	Activity

Family AGAMIDAE	Species *Uromastyx acanthinurus*	Status Locally common

BELL'S MASTIGURE



AFRICA

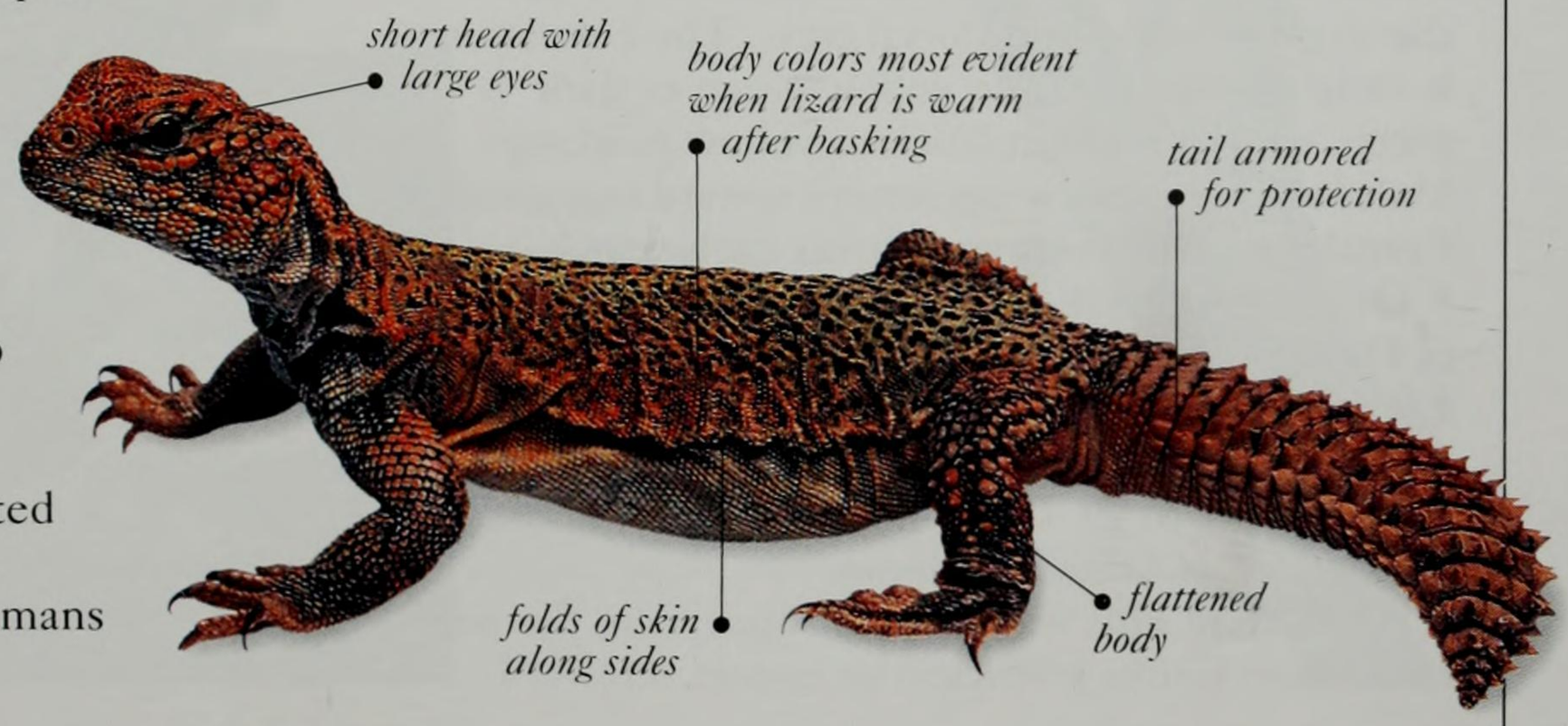
Also known as the Dab or Spiny Lizard, Bell's Mastigure is gray when it emerges from its burrow in the early morning but, after a period of basking in the sun, it begins to develop a vivid combination of orange, red, yellow, or green coloration, with black flecks and reticulations. The spiny tail is relatively short and armored for protection, with up to 20 whorls of spines. One row of large, sharp, spiny scales on the upper side of the tail corresponds to two rows of smaller scales on the underside. The tail may be used to block the entrance to the burrow of this primarily vegetarian lizard as protection from predators, and it also serves as a useful defensive weapon.

• **OCCURRENCE** N. Africa. In desert hillside scrub.

• **REPRODUCTION** Lays 10–23 eggs.

• **SIMILAR SPECIES** Sahara Mastigure or Dab Lizard (*Uromastyx geyri*).

• **REMARK** Bell's Mastigure is over-exploited for a variety of purposes ranging from food for humans to live shark-bait.



Length 12–16in (30–40cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Calumna parsonii*	Status Rare

PARSON'S CHAMELEON



MADAGASCAR

In common with many members of its genus, this chameleon has a robust head with a casque that has a flattened upper surface and resembles a pair of elephant's ears. Some have a projection on the snout. Its general coloring is turquoise-blue to green with brown between the casque lobes and down the back. Unlike smaller chameleons, it may remain motionless for long periods during the day.

• **OCCURRENCE** N. and E. Madagascar. In montane forest with a continuous, high canopy.

• **REPRODUCTION** Lays 30–60 eggs.

• **SIMILAR SPECIES** O'Shaughnessy's Chameleon (*Calumna oshaughnessyi*).

flat-topped casque resembling elephant's ears

turquoise-blue to green coloration

snout may bear small, knobbly projection

foot divided into two or three fused toes, which oppose to provide grip

long prehensile tail curled tightly when at rest

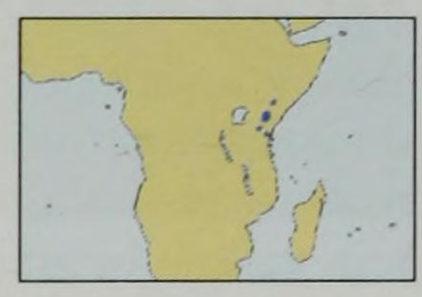
Length 16–28in (40–70cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Chamaeleo jacksonii*	Status Locally common

JACKSON'S THREE-HORNED CHAMELEON

male has three hornlike projections

"turret" eyes can move and operate independently



AFRICA

The males of this mountain species are easily recognized by the three triceratops-like projections on the front of the head. Adult females lack the long horns but share the small head casque and the slightly raised mid-dorsal crest. The coloration is variable, ranging from yellow-green to dark green, with or without black or yellow markings. Males are territorially aggressive toward one another. Females may produce two litters each year.

• **OCCURRENCE** Kenya and Tanzania. (Introduced to Hawaii and California, US.) In montane forest, at 4,900–8,200ft (1,500–2,500m).

• **REPRODUCTION** Live-bearing, 5–50 neonates.

• **SIMILAR SPECIES** Johnston's Three-horned Chameleon (*Chamaeleo johnstoni*).

• **REMARK** This was the main species in the pet trade until Kenya restricted its export.

long prehensile tail gives extra grip

Length 8–12in (20–30cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Chamaeleo calyptratus*	Status Locally common

YEMENI VEILED CHAMELEON



MIDDLE EAST

Easily recognized by its high cranial casque – a peculiarity of Arabian chameleons – the Yemeni Veiled Chameleon inhabits the surprisingly humid coastal lowlands, mountain slopes, and high plateaus of the southwestern corner of the Arabian Peninsula. It has been suggested that the helmetlike casque and accompanying forward-folding occipital flaps may collect early morning dew and funnel it toward the jaws. It is possible, too, that the casque, with its extensive supply of blood vessels, may act as a cooling device – an invaluable feature in a hot climate. Many chameleons are laterally compressed, but this species is more compressed than most, being shaped almost like a large leaf. Its coloration is variable, with broad yellow and green bands above, and blue-green and yellow bands below. Two subspecies are recognized. The casques of males from the northern subspecies (*Chamaeleo calyptratus calcarifer*) are lower than those of the southern race (*C. calyptratus calyptratus*), shown here. In both cases, females have substantially lower casques than males.

• **OCCURRENCE** Yemen and S.W. Saudi Arabia. On mountain slopes and coastal lowlands.

• **REPRODUCTION** Lays 27–80 eggs.

male has enlarged cranial casque

body patterning variable but usually consists of green and yellow bands

body extremely laterally compressed

male has spurs on feet

long prehensile tail

MALE

serrated crest along back

female has much shorter cranial casque than male



serrated crest from chin to cloaca

FEMALE

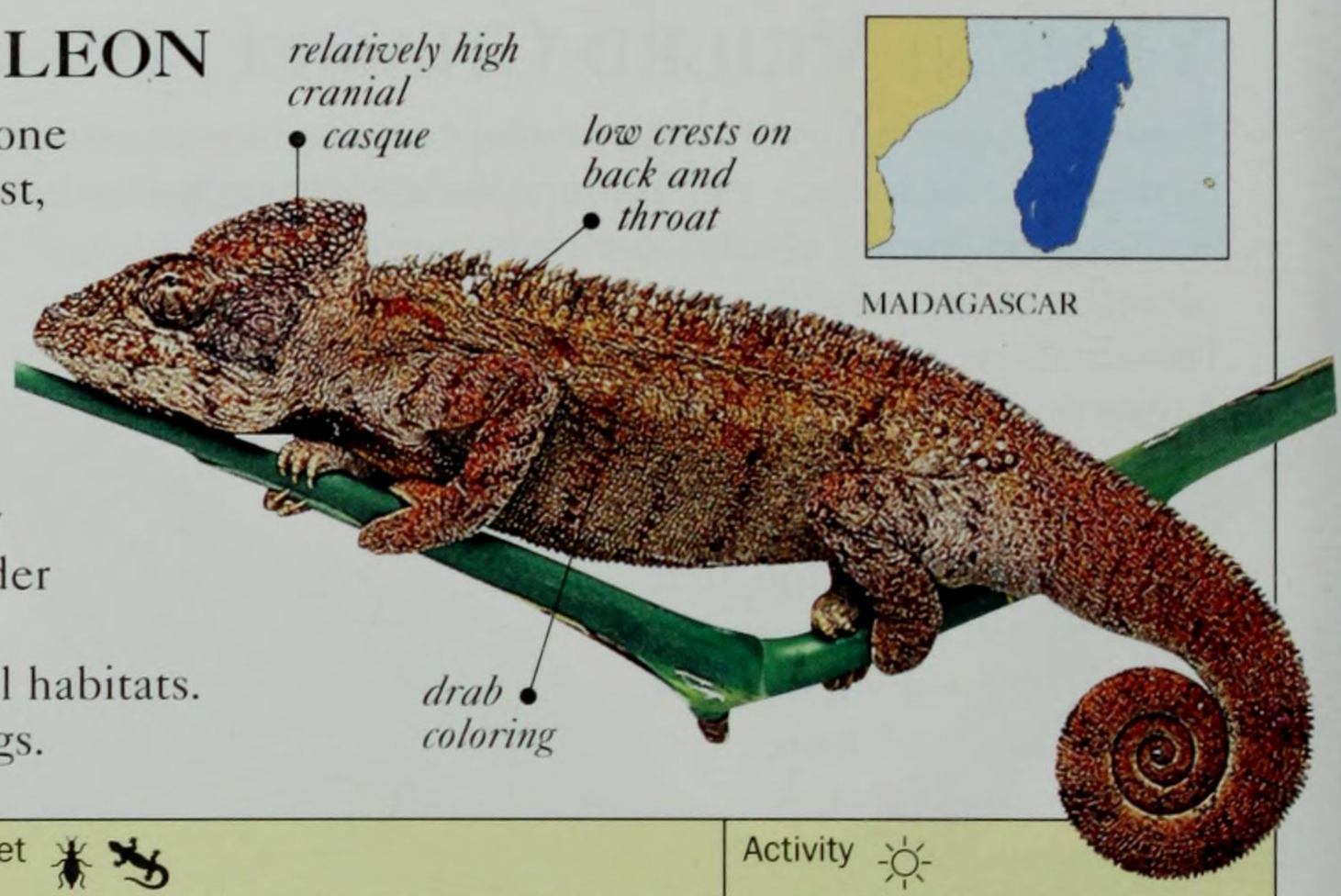
Length 10–24in (25–60cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Furcifer oustaleti*	Status Endangered

OUSTALET'S CHAMELEON

The largest Madagascan species and one of the few to inhabit the arid southwest, Oustalet's Chameleon is adapted for life in dry, leafless conditions. Juveniles are red-brown, slender, and sticklike. Adult males are gray-brown; females may have a red head and forelimbs. Both have a fairly high cranial casque and low crests under the chin and down the back.

• OCCURRENCE Madagascar. In all habitats.
• REPRODUCTION Lays 50–60 eggs.



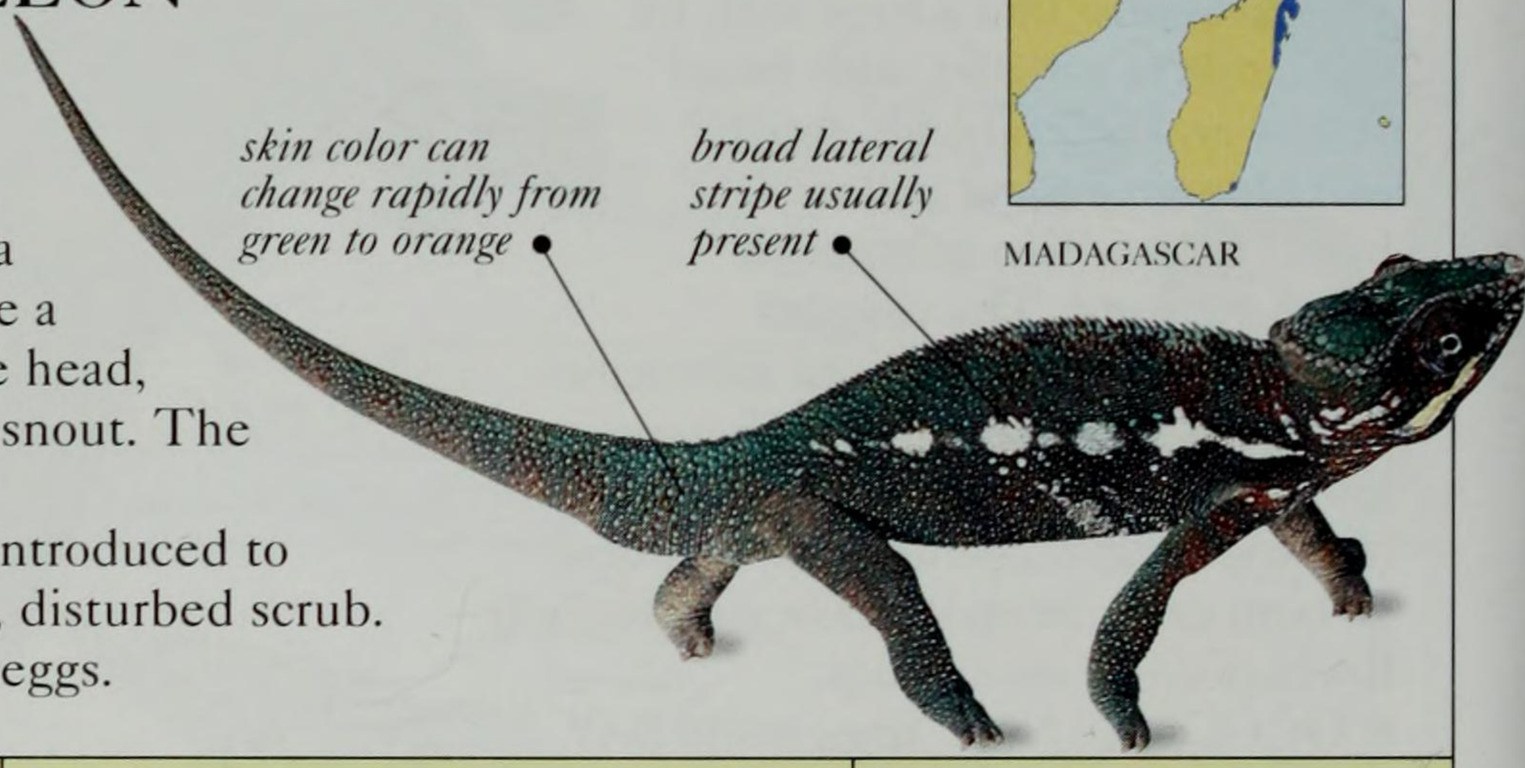
Length 20–27¼in (50–68cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Furcifer pardalis*	Status Endangered

PANTHER CHAMELEON

One of the most colorful of chameleons, this is an extremely variable species. Almost any color combination is possible, including a startling turquoise-blue. Males have a raised ridge down either side of the head, ending in a flattened area over the snout. The cranial casque is relatively low.

• OCCURRENCE Madagascar. (Introduced to Mauritius and Réunion.) In humid, disturbed scrub.
• REPRODUCTION Lays 12–50 eggs.



Length 16–22½in (40–56cm)	Diet	Activity

Family CHAMAELEONIDAE	Species *Rhampholeon spectrum*	Status Unknown

CAMEROON DWARF CHAMELEON

This small chameleon is cryptically patterned to resemble a dead leaf. It has a dark midvein down the center of the back, and radiating side veins down its sides. When disturbed on a low bush, the Cameroon Dwarf Chameleon will drop to the forest floor and remain motionless, as if it were a fallen leaf.

• OCCURRENCE C. Africa. In low-growing vegetation in rainforest.
• REPRODUCTION Lays 12–18 eggs.
• SIMILAR SPECIES South African Leaf Chameleon (*Rhampholeon marshalli*).


AFRICA



Length 3¼–4in (8–10cm)	Diet	Activity

Family SCINCIDAE	Species *Chalcides ocellatus*	Status Common

OCELLATED SKINK

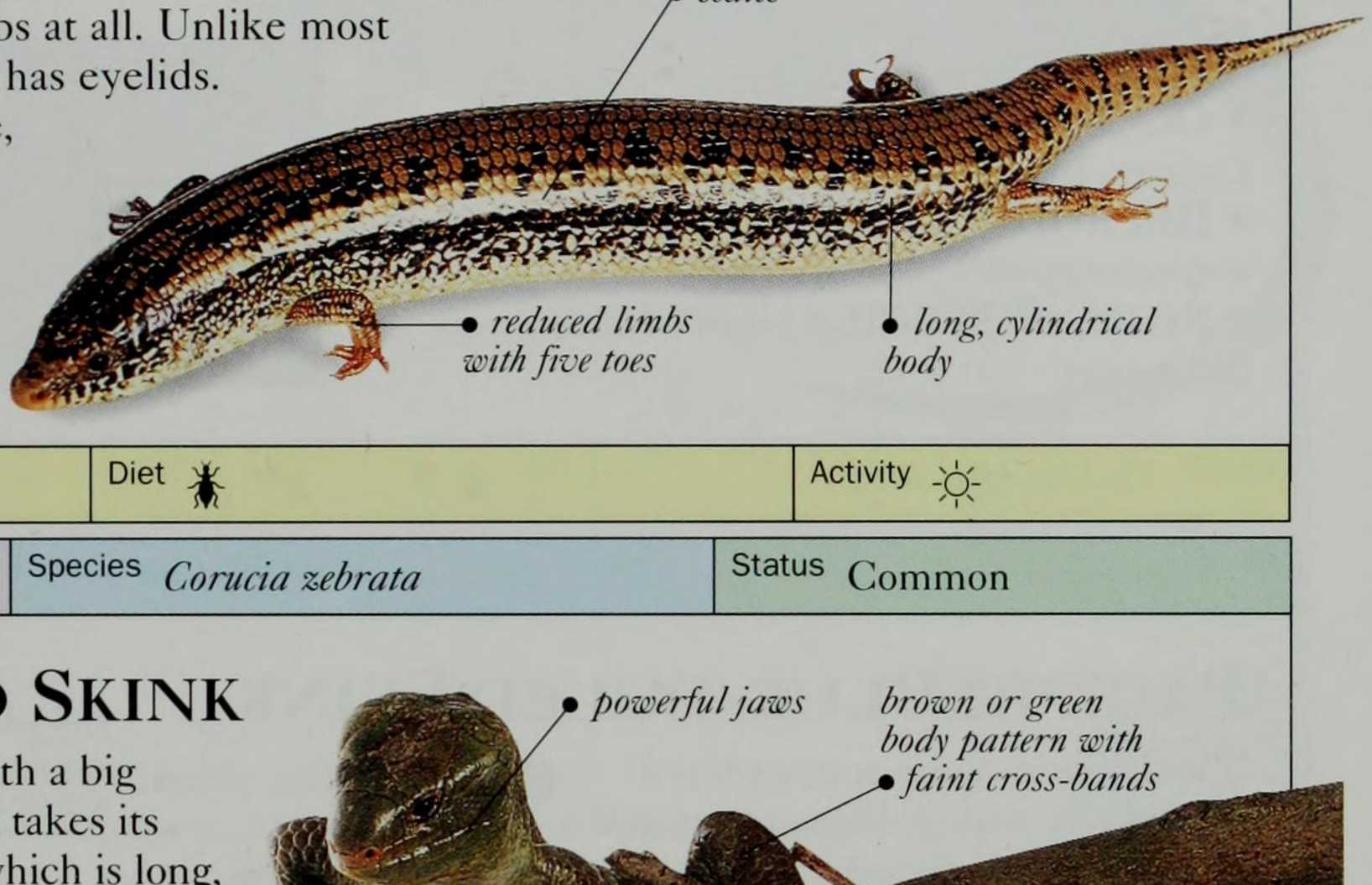
This is a long, cylindrical lizard with short legs and five-toed feet. It burrows through loose, shifting sand by undulating body movements, a process known as sandswimming. Other species of sandswimmers are more snakelike, and have shorter legs with three toes, or no limbs at all. Unlike most burrowing lizards, this species has eyelids.

• OCCURRENCE S. Europe, N. Africa, and S.W. Asia. In sandy and rocky habitats.

• REPRODUCTION Live-bearing, 3–10 neonates.



EUROPE, AFRICA, ASIA

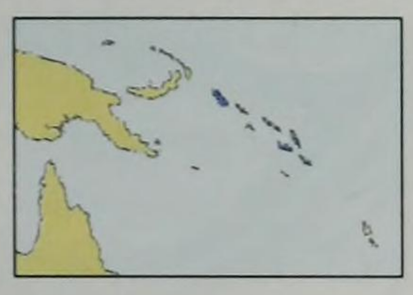


Length 7–12in (18–30cm)	Diet	Activity

Family SCINCIDAE	Species *Corucia zebrata*	Status Common

MONKEY-TAILED SKINK

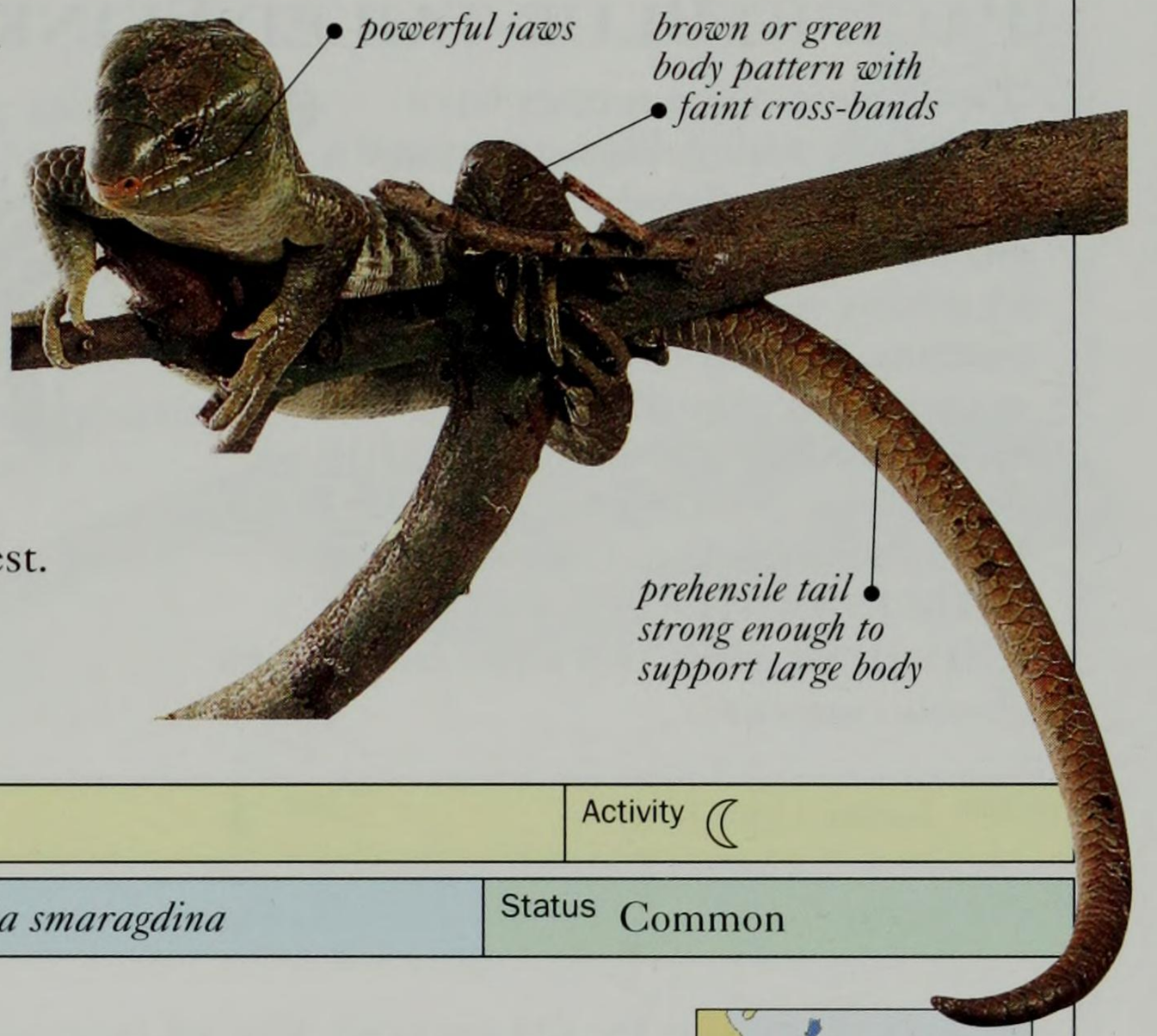
A large, heavy-bodied lizard with a big head, the Monkey-tailed Skink takes its name from its prehensile tail, which is long, sensitive, and strong enough to support the skink as it climbs around in the canopy. By night it feeds on fruit and vine leaves; by day it hides in tree holes or leaf-litter.



OCEANIA

• OCCURRENCE Solomon Islands and Bougainville. In rainforest.

• REPRODUCTION Live-bearing, 1–2 neonates.



Length 30–31in (75–80cm)	Diet	Activity

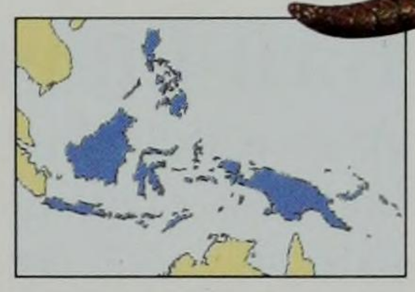
Family SCINCIDAE	Species *Dasia smaragdina*	Status Common

EMERALD TREE SKINK

The bright green coloration with black spotting makes this lizard almost invisible in the tree canopy until it moves. The hind part of the body and the tail are brown. An early morning sun-basker, the highly active and agile Emerald Tree Skink feeds on invertebrates. It rarely descends to the ground, except to lay a pair of eggs in the leaf-litter. Apart from insects, flowers and fruit also form a small part of its diet.

• OCCURRENCE E. Asia, S.E. Asia, and S.W. Pacific. In forest and on plantations.

• REPRODUCTION Lays 2 eggs.



ASIA, OCEANIA



Length 7–8¾in (18–22cm)	Diet	Activity

Family SCINCIDAE	Species *Egernia frerei*	Status Common

MAJOR SKINK

The Major Skink has a two-tone, light brown back and dark brown sides, distinguishing it from the otherwise similar Land Mullet (*Egernia major*), which has a uniform dark brown body. The body of the Major Skink is long and relatively square, the snout is pointed, and the limbs are well developed but fairly short.

• **OCCURRENCE** N. Australia and S. New Guinea. In woodland and rocky outcrops.

• **REPRODUCTION** Live-bearing, 4–6 neonates.

• **SIMILAR SPECIES** Land Mullet (*E. major*).



AUSTRALASIA



Length 12–14in (30–36cm)	Diet	Activity

Family SCINCIDAE	Species *Emoia caeruleocauda*	Status Common

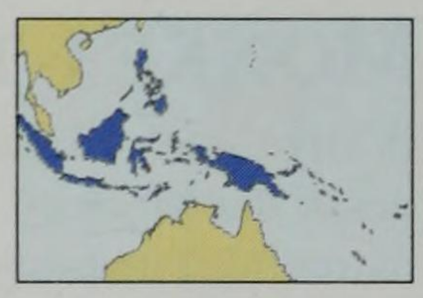
PACIFIC BLUE-TAILED SKINK

This wide-ranging species has a black body with golden stripes and a long, brightly colored, turquoise to electric-blue tail. It sometimes displays by waving its tail in slow figure-of-eight patterns, possibly to ward off other skinks as part of a territorial display.

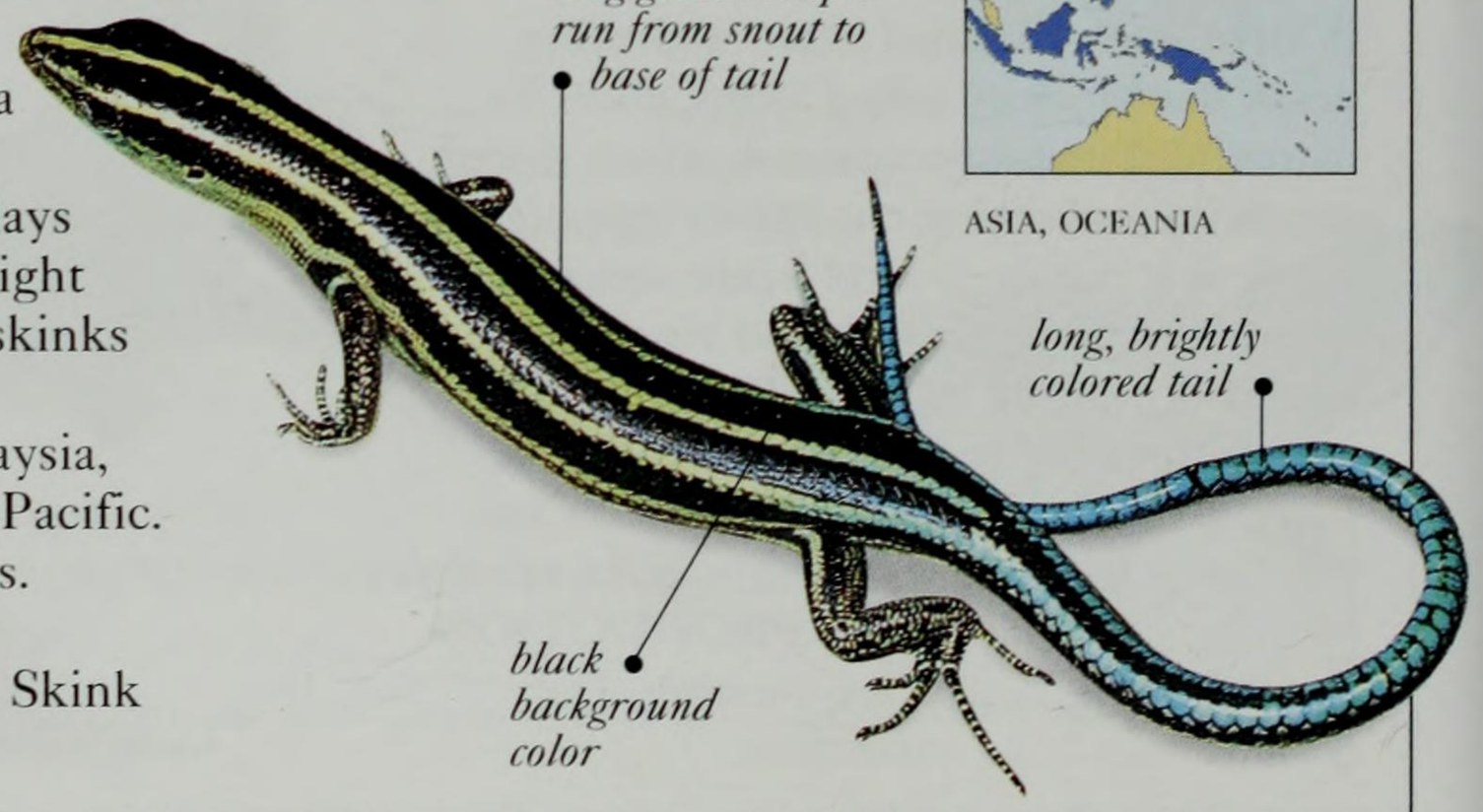
• **OCCURRENCE** Indonesia, Malaysia, Philippines, New Guinea, and S.W. Pacific. In scrub, gardens, and on plantations.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Cyan-tailed Skink (*Emoia cyanura*).



ASIA, OCEANIA



Length 4–4¾in (10–12cm)	Diet	Activity

Family SCINCIDAE	Species *Eugongylus rufescens*	Status Locally common

BAR-LIPPED SHEEN SKINK

A powerfully built animal, this skink has a relatively square body, long tail, and short limbs. Adults are red-brown above, pale brown on the sides, and yellowish brown below. Fine dark lines radiate from the eye to the jaw, and the lips are often barred. Juveniles are brown to black with white bands.

• **OCCURRENCE** New Guinea and extreme N.E. Australia. In rainforest.

• **REPRODUCTION** Lays 2–4 eggs.

• **SIMILAR SPECIES** White-striped Sheen Skink (*Eugongylus albofasciolatus*).



AUSTRALASIA



Length 10–11in (25–29cm)	Diet	Activity

Family SCINCIDAE	Species *Eumeces schneideri*	Status Common

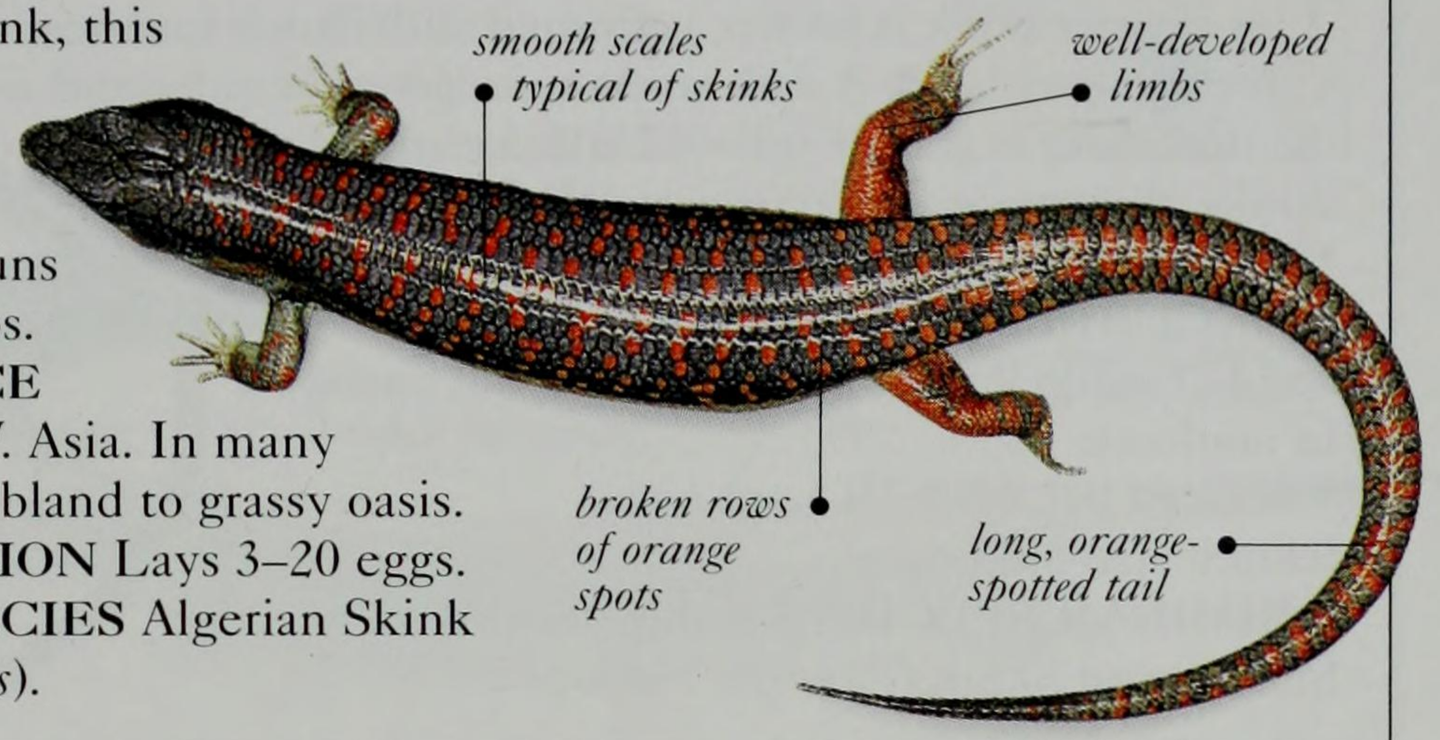
SCHNEIDER'S GOLD SKINK

Also known as the Orange-tailed Skink, this active, smooth-scaled lizard has a brown, orange-spotted back and upper sides and an off-white underside. A broad line of yellow-orange runs from the lips to beyond the hindlimbs.



AFRICA, ASIA

• **OCCURRENCE** N. Africa and S.W. Asia. In many habitats from scrubland to grassy oasis.
• **REPRODUCTION** Lays 3–20 eggs.
• **SIMILAR SPECIES** Algerian Skink (*Eumeces algeriensis*).

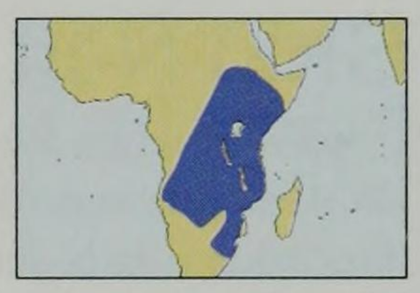


Length 14–16½in (36–42cm)	Diet	Activity

Family SCINCIDAE	Species *Mabuya striata*	Status Common

STRIPED MABUYA

Coloration in this species is highly variable and confusing, since there are several related mabuyas in Africa. All are stout-bodied skinks, with pointed snouts and well-developed limbs. The Striped Mabuya is usually orange to brown, or black, with a pair of paler stripes running along the back. The throat and lips are white or yellow.
• **OCCURRENCE** E. and S. Africa. In a wide variety of habitats, frequently encountered in gardens and around buildings.
• **REPRODUCTION** Live-bearing, 3–9 neonates.
• **SIMILAR SPECIES** Variable Skink (*Mabuya varia*).



AFRICA



Length 8¾–10in (22–25cm)	Diet	Activity

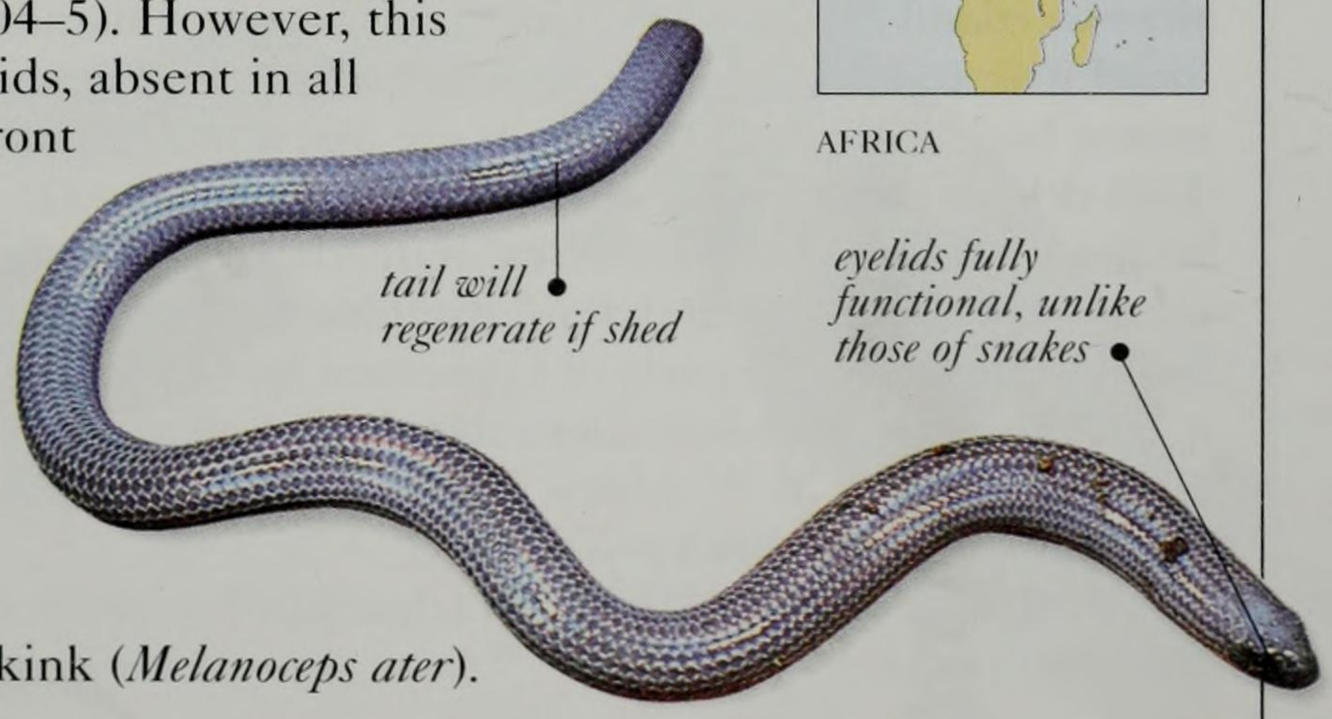
Family SCINCIDAE	Species *Melanoceps occidentalis*	Status Locally common

WESTERN LEGLESS SKINK

Small, legless skinks are easily confused with blindsnakes (Typhlopidae and Leptotyphlopidae, pp.104–5). However, this lizard possesses fully functional lower eyelids, absent in all snakes. The scales are brown toward the front but transparent toward the rear. The tail ends in a tiny spine, used for digging and forcing the lizard along subterranean passages. Although the tail regenerates if damaged, the terminal spine does not.
• **OCCURRENCE** W. Africa. In riverine forest.
• **REPRODUCTION** Unknown.
• **SIMILAR SPECIES** Eastern Legless Skink (*Melanoceps ater*).



AFRICA



Length 4–4¾in (10–12cm)	Diet	Activity

Family SCINCIDAE	Species *Panaspis reichenowi*	Status Locally common

REICHENOW'S SNAKE-EYED SKINK



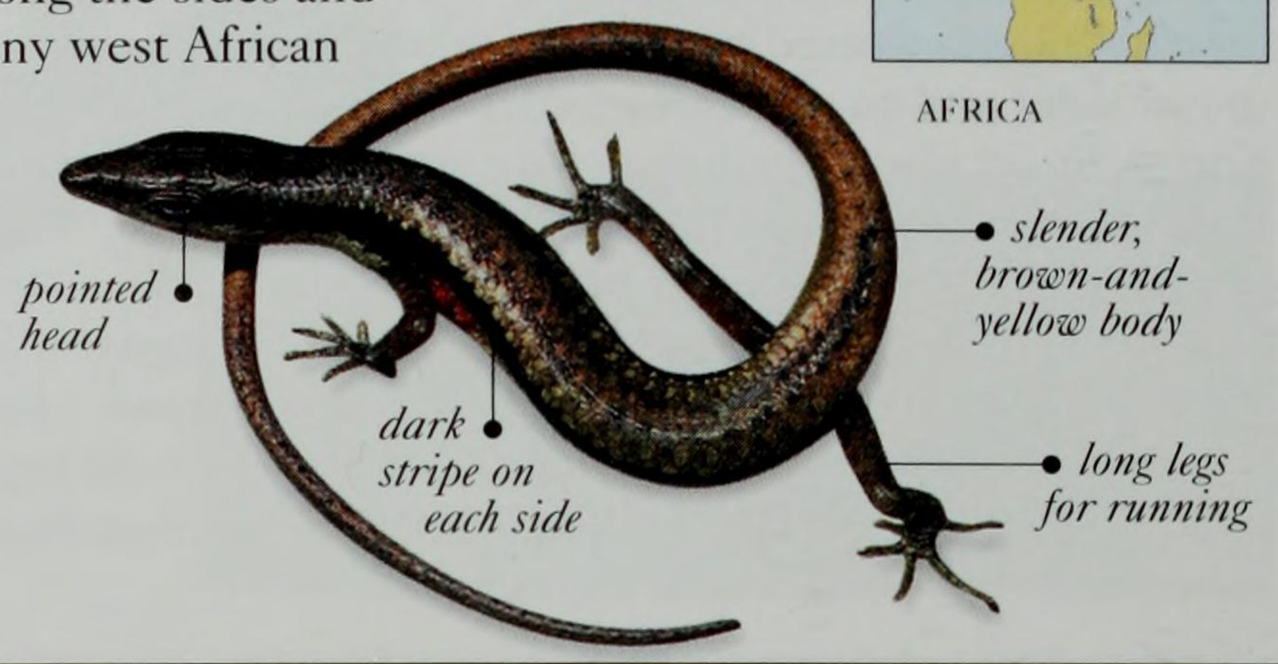
AFRICA

This slender skink is brown, patterned with darker brown and yellow, with a greenish gray head. A dark stripe runs along the sides and the underside is gray or yellow. Unlike many west African skinks, this species has transparent "spectacles" instead of movable eyelids.

• **OCCURRENCE** Cameroon, Gabon, and Fernando Po, Equatorial Guinea. In rainforest.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Rohde's Snake-eyed Skink (*Panaspis rohdei*).



Length 4–6in (10–15cm)	Diet	Activity

Family SCINCIDAE	Species *Prasinohaema semoni*	Status Rare

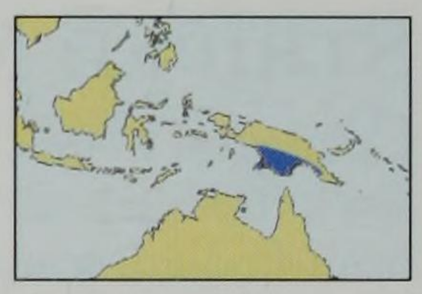
GREEN-BLOODED SKINK

Cream to white below and on the sides, this arboreal skink has a cream-brown back with alternating mid- and dark brown bars across it. The body is slender, the limbs long and well developed, and the prehensile tail is used for climbing. This species and its close relatives are the only known terrestrial, green-blooded vertebrates.

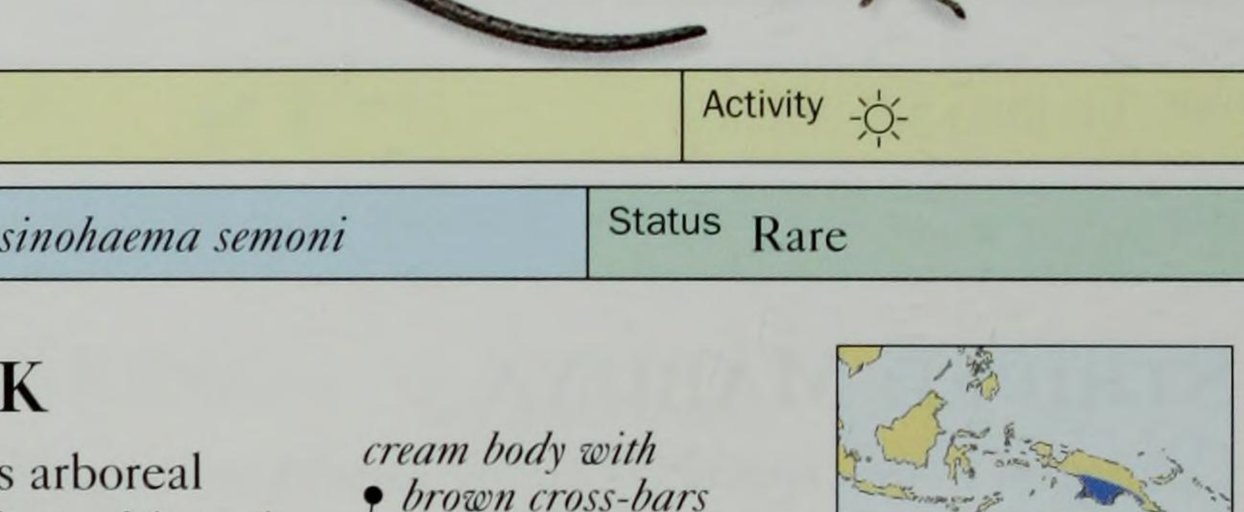
• **OCCURRENCE** S. New Guinea. In forest and on coconut plantations.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** *Prasinohaema flavipes* (Green-blooded Skink).



NEW GUINEA



Length 4–6in (10–15cm)	Diet	Activity

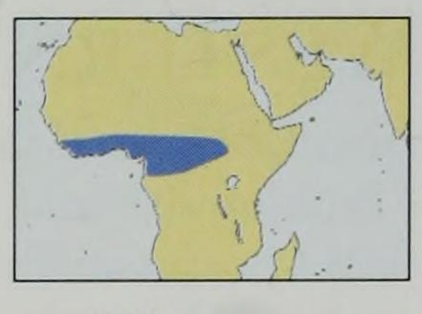
Family SCINCIDAE	Species *Riopa fernandi*	Status Rare

FERNANDO PO FIRE SKINK

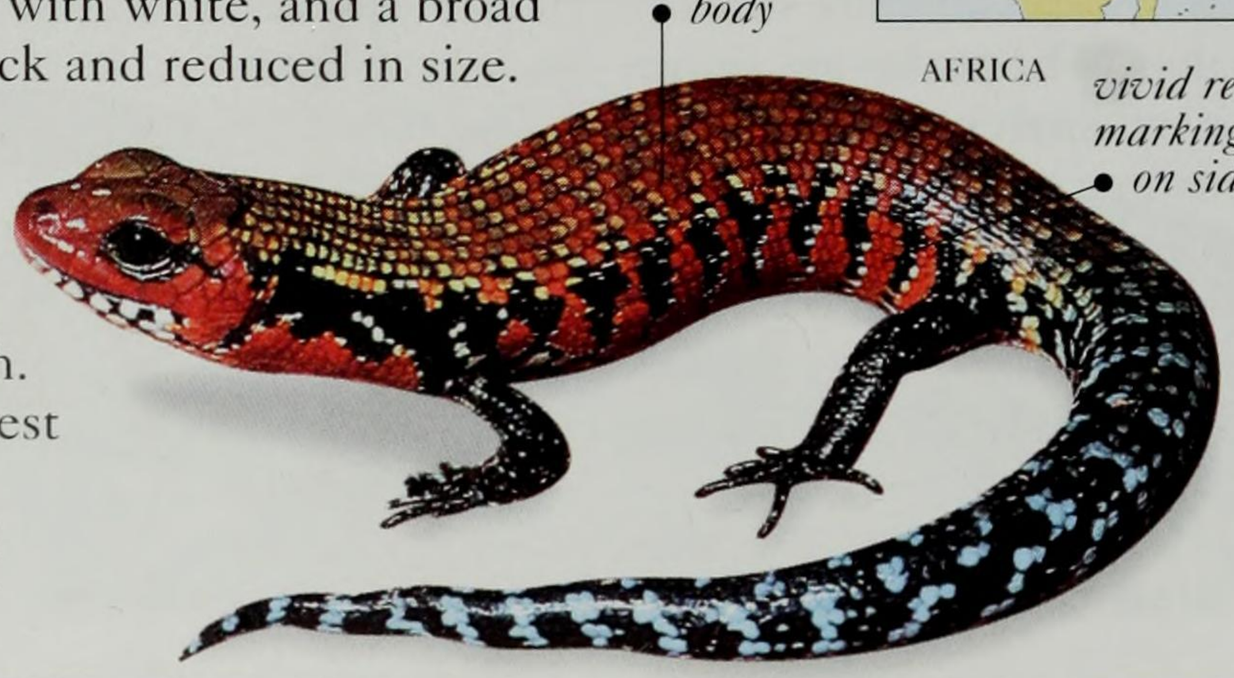
One of the most attractive skinks in Africa, this species is named after an island off the west coast. It is a stout, square-bodied lizard with red-and-black sides speckled with white, and a broad brown back and head. The limbs are black and reduced in size. This skink inhabits rainforest, living in burrows beneath tree buttresses. Rarely seen in the open, it will defend itself by biting if molested. In parts of Cameroon it is thought to be poisonous to the touch.

• **OCCURRENCE** W. Africa. In rainforest and on plantations.

• **REPRODUCTION** Lays eggs (clutch size unknown).



AFRICA



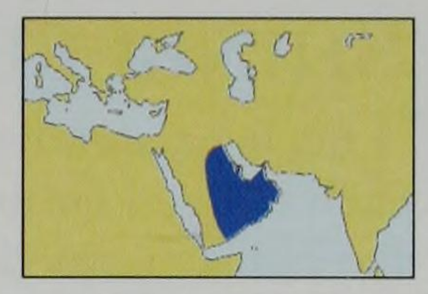
Length 8–14in (20–36cm)	Diet	Activity

Family SCINCIDAE	Species *Scincus mitranus*	Status Locally common

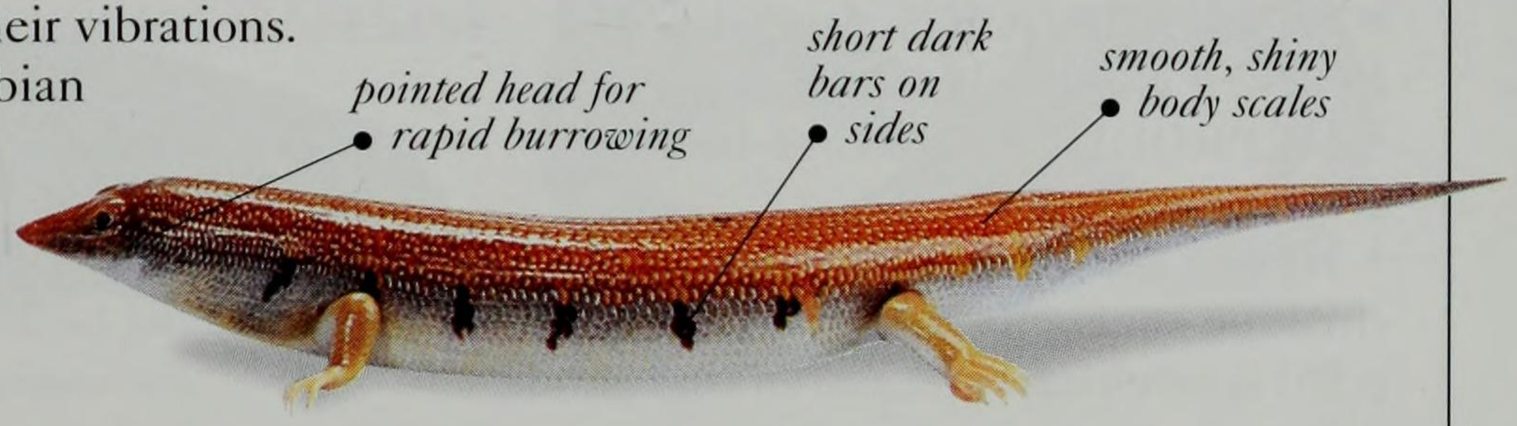
MITER SANDFISH

A smooth-scaled, shiny-bodied lizard, the Miter Sandfish has a pointed head, small eyes, and well-developed legs. The light brown back may be speckled with dark brown or black, and dark bars on the sides of the body may meet across the back. All sandfish live in loose, sandy habitats, moving just below the surface. They hunt surface-dwelling insects by homing in on their vibrations.

• **OCCURRENCE** S. and W. Arabian Peninsula. In desert and steppe.
• **REPRODUCTION** Lays 4–6 eggs.
• **SIMILAR SPECIES** Sandfish (*Scincus scincus*).



MIDDLE EAST



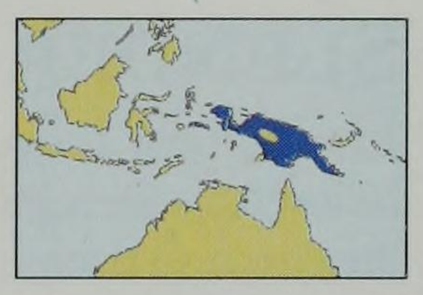
Length 4¾–6¼in (12–16cm)	Diet	Activity

Family SCINCIDAE	Species *Sphenomorphus muelleri*	Status Rare

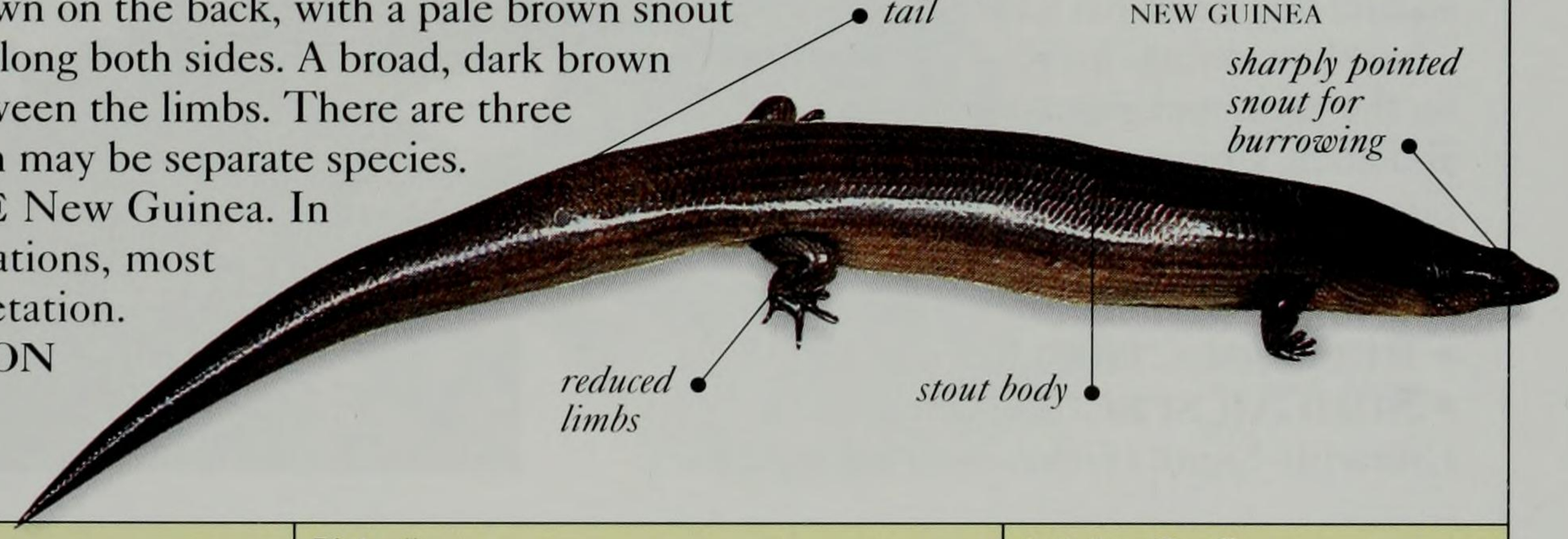
MÜLLER'S SKINK

The Müller's Skink is a stout-bodied lizard with smooth scales, short limbs, a tapering tail, and a pointed head with small eyes. Some populations are completely dark silver-gray. Others are dark brown on the back, with a pale brown snout and a cream stripe along both sides. A broad, dark brown stripe also runs between the limbs. There are three color variants, which may be separate species.

• **OCCURRENCE** New Guinea. In forest and on plantations, most often found in vegetation.
• **REPRODUCTION** Lays eggs (clutch size unknown).



NEW GUINEA

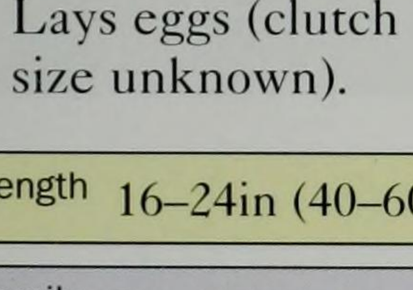


Length 16–24in (40–60cm)	Diet	Activity

Family SCINCIDAE	Species *Tiliqua gigas*	Status Common

NEW GUINEA BLUE-TONGUED SKINK

This smooth-scaled lizard is stocky, with a tapering tail and a broad head with large scutes. The coloration can vary but usually consists of dark-edged brown cross-bars on a paler background. This skink defends itself by hissing and waving its blue tongue, making short lunges at its aggressor.



ASIA, NEW GUINEA

• **OCCURRENCE** New Guinea and E. Indonesia. In forest, savanna, and on plantations.
• **REPRODUCTION** Live-bearing, 5–25 neonates.
• **SIMILAR SPECIES** Eastern Blue-tongued Skink (*Tiliqua scincoides*).

Length 20–24in (50–60cm)	Diet	Activity

Family SCINCIDAE	Species *Trachydosaurus rugosus*	Status Locally common

SHINGLEBACK

This long, slender, red-brown skink has short legs and large scales, each with a knobbly central keel, hence "shingleback." The short, flat tail is rounded at the tip and covered in knobbly scales. These slow-moving lizards are especially at risk when crossing roads and many are killed by traffic.

• OCCURRENCE S. Australia. In desert and scrubland.

• REPRODUCTION Live-bearing, 2–3 neonates.

• REMARK This close relation of the blue-tongued skinks (*Tiliqua* species, p.85) is sometimes placed in that genus.



AUSTRALIA



Length 12–14in (30–35cm)	Diet	Activity

Family SCINCIDAE	Species *Tribolonotus gracilis*	Status Locally common

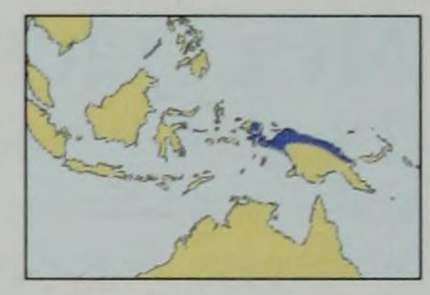
SLENDER CROCODILE SKINK

Dark brown above and yellowish brown below, this slender lizard has an orange area around each eye and a yellow ring around the iris. It has a casquelike head, a beaklike mouth, four rows of raised scales on the back, and glands on the feet and abdomen. Commonly found in coconut husk piles, it screeches loudly when uncovered.

• OCCURRENCE New Guinea. In forest and on plantations.

• REPRODUCTION Lays 1 egg.

• SIMILAR SPECIES New Guinea Crocodile Skink (*Tribolonotus novaeguineae*).



NEW GUINEA



Length 6–8in (15–20cm)	Diet	Activity

Family SCINCIDAE	Species *Tropidophorus grayi*	Status Common

GRAY'S WATERSKINK

This is a lightly spotted brown lizard with cross-bands formed of irregular dark spots. The head and body scales are keeled, those of the body forming rows down the back. The scales of the white underside are smooth. Prey appears to be insects, crustaceans, and other aquatic invertebrates. As with many waterskinks, little is recorded of this species' way of life.

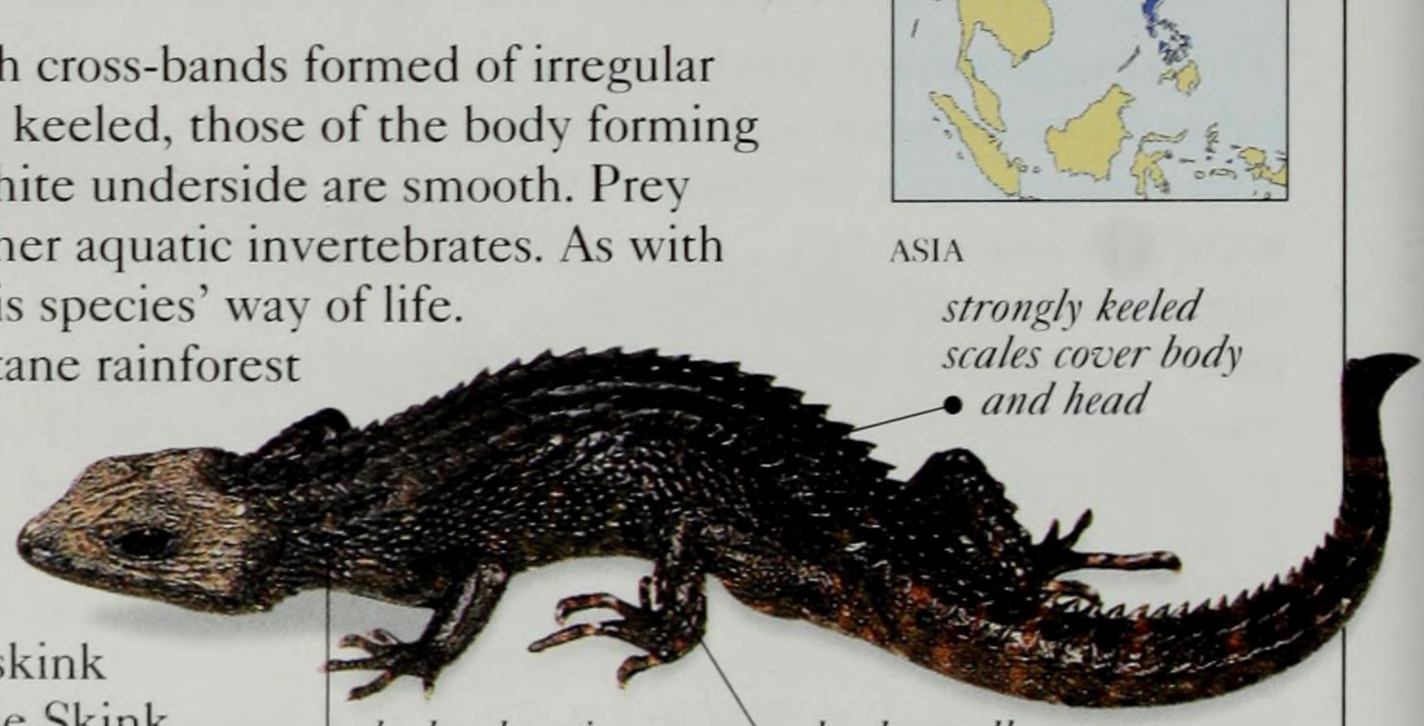
• OCCURRENCE Philippines. In montane rainforest streams, sheltering in leaf-litter or under submerged logs.

• REPRODUCTION Live-bearing, 4–6 neonates.

• SIMILAR SPECIES Partello's Waterskink (*Tropidophorus partelloi*), Slender Crocodile Skink (*Tribolonotus gracilis*, above).



ASIA



Length 8–9½in (20–24cm)	Diet	Activity

Family DIBAMIDAE	Species *Dibamus nicobaricus*	Status Unknown

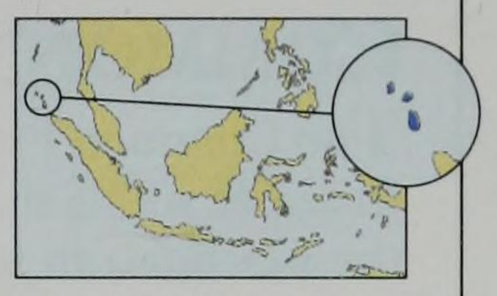
NICOBAR BLIND LIZARD

This lizard resembles a blindsnake (Typhlopidae, p.104), a legless skink (Scincidae, p.83), or a small Slow Worm (*Anguis fragilis*, p.94). It has a cylindrical body, covered in tiny, smooth scales, and a pointed head that is slightly distinct from the neck. Mainly chestnut-brown, it has a broad, cream-colored band around the nape and a broader, darker band at mid-body. The underside is flesh colored.

• **OCCURRENCE** Nicobar Islands, India. In riverine forest and rainforest, under rocks and leaf-litter.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Montane Blind Lizard (*Dibamus montanus*), White Blind Lizard (*D. leucurus*).



NICOBAR ISLANDS



Length 4–5in (10–13cm)	Diet	Activity

Family CORDYLIDAE	Species *Cordylus cataphractus*	Status Endangered

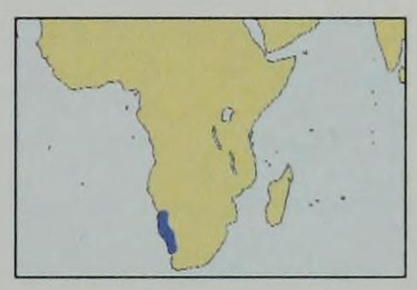
ARMADILLO GIRDLED LIZARD

A light brown, stout-bodied species, the Armadillo Girdled Lizard has a tail comprising whorls of large, sharp, spiny scales. When trapped in the open, it rolls into a ball with its tail in its mouth, making it awkward for a predator to attack. This species is now protected in South Africa.

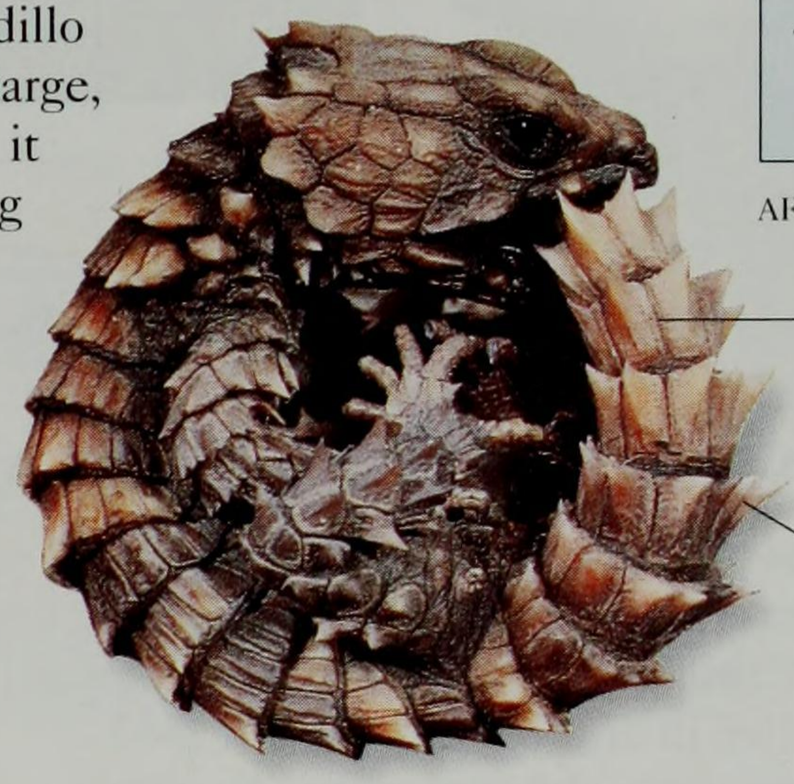
• **OCCURRENCE** W. South Africa and S. Namibia. In rocky outcrops in dry scrubland.

• **REPRODUCTION** Live-bearing, 1–2 neonates.

• **SIMILAR SPECIES** Sungazer (*Cordylus giganteus*).



AFRICA



Length 6¼–8¼in (16–21cm)	Diet	Activity

Family CORDYLIDAE	Species *Gerrhosaurus major*	Status Common

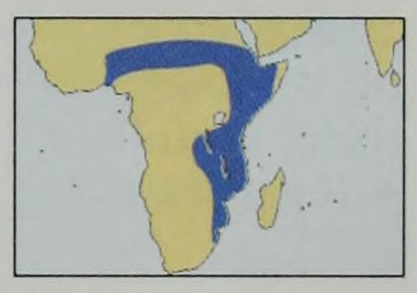
GIANT PLATED LIZARD

The brown-backed, yellow-bellied Giant Plated Lizard is a stout, squarish species with rectangular, keeled, platelike scales. The head is pointed, with large eyes and ear openings. The throat may be light blue, and a longitudinal body stripe may be present. A fold of skin runs from the jaw to the hindlimbs along the lower body.

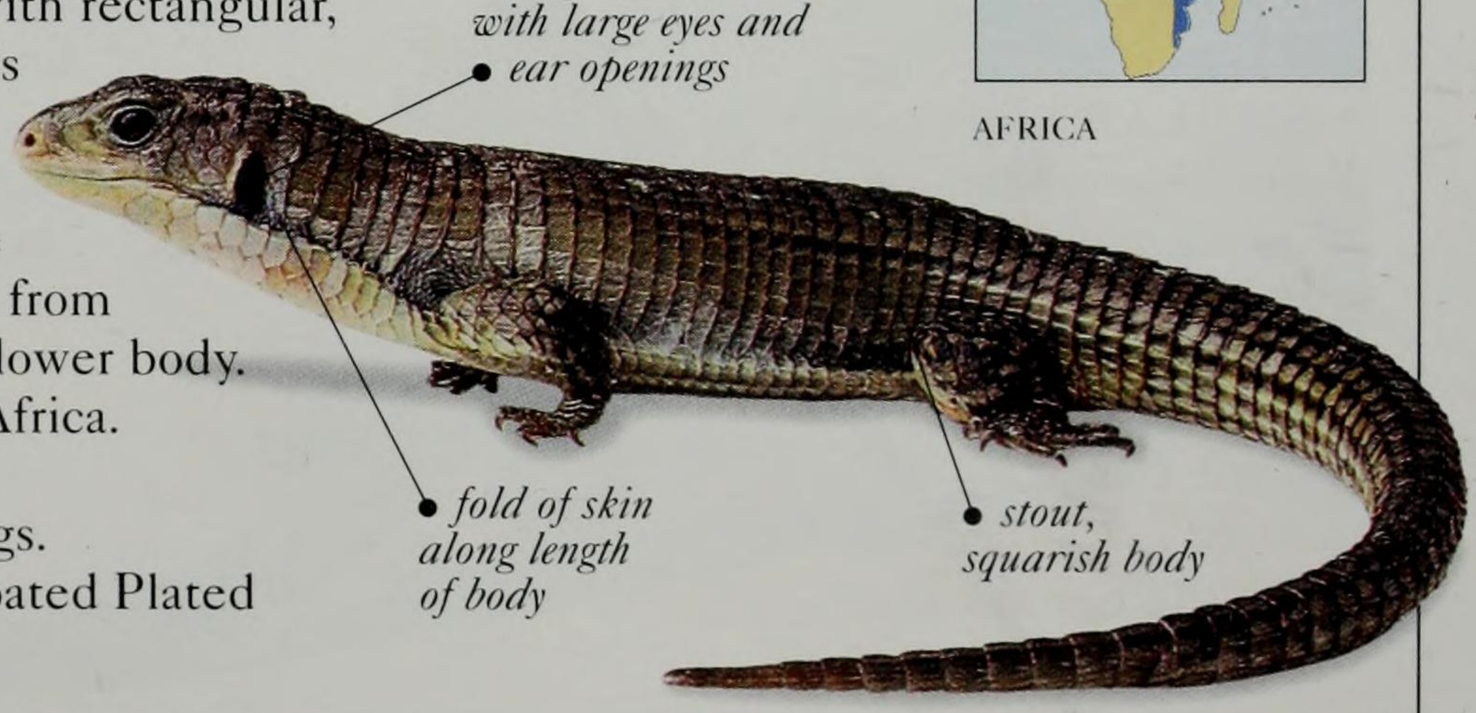
• **OCCURRENCE** C., E., and S. Africa. On rocky savanna.

• **REPRODUCTION** Lays 2–4 eggs.

• **SIMILAR SPECIES** Yellow-throated Plated Lizard (*Gerrhosaurus flavigularis*).



AFRICA



Length 16–19in (40–48cm)	Diet	Activity

Family LACERTIDAE	Species *Acanthodactylus erythrurus*	Status Common

COMMON FRINGE-TOED LIZARD

The Common Fringe-toed Lizard takes its name from a fringe of scales that runs along the edge of each toe, enabling the lizard to run freely across loose, shifting sand. Adults are brown on the back and black and yellow on the sides, and they have a white underside. A series of lengthwise white stripes or black spots may be present on the back. Juveniles are black with white stripes and a red tail. An alert lizard, this species adopts a characteristic position with the front of its body raised to watch for predators. It is found around the bases of bushes in sandy habitats.

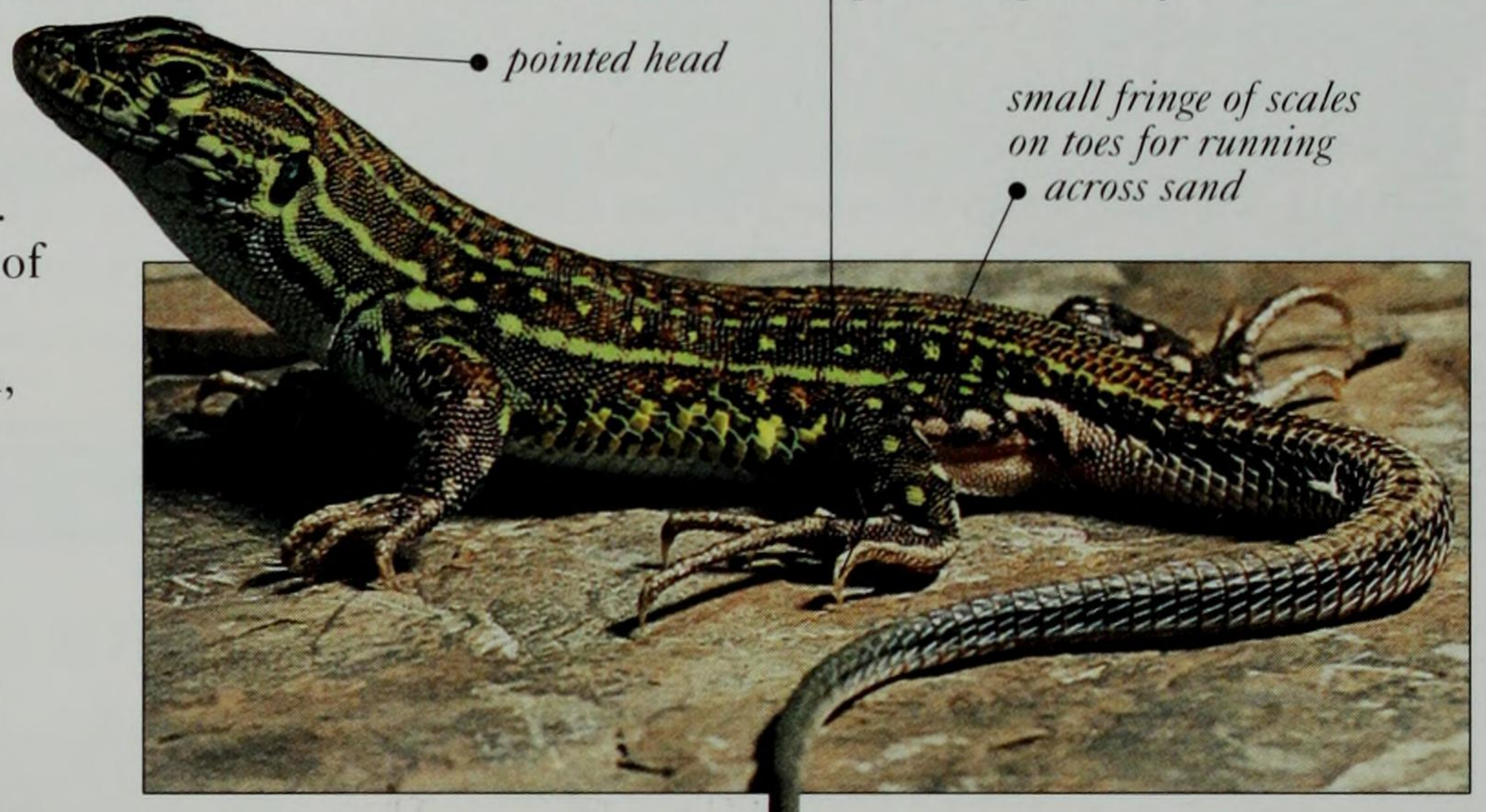
• **OCCURRENCE** S. Spain, Portugal, and Morocco. In sandy scrubland.

• **REPRODUCTION** Lays 6–7 eggs.

• **SIMILAR SPECIES** Leopard Fringe-toed Lizard (*Acanthodactylus pardalis*).



EUROPE, AFRICA



Length 7–9in (18–23cm)	Diet	Activity

Family LACERTIDAE	Species *Gallotia galloti*	Status Locally common

WEST CANARIES GALLOTIA

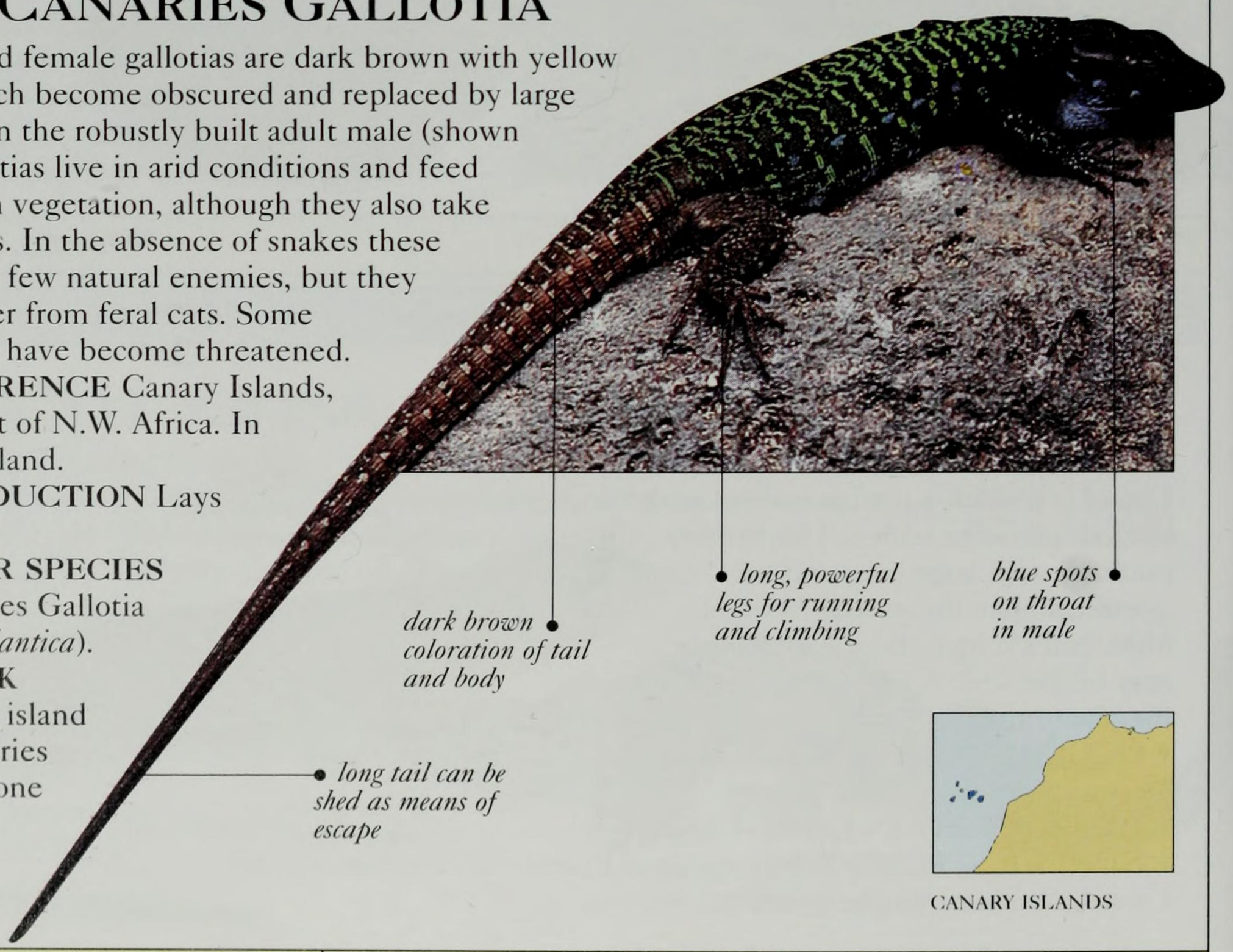
Juvenile and female gallotias are dark brown with yellow stripes, which become obscured and replaced by large blue spots in the robustly built adult male (shown here). Gallotias live in arid conditions and feed primarily on vegetation, although they also take large insects. In the absence of snakes these lizards have few natural enemies, but they are in danger from feral cats. Some populations have become threatened.

• **OCCURRENCE** Canary Islands, off the coast of N.W. Africa. In rocky scrubland.

• **REPRODUCTION** Lays 2–7 eggs.

• **SIMILAR SPECIES** East Canaries Gallotia (*Gallotia atlantica*).

• **REMARK** Every large island in the Canaries is home to one or more species of *Gallotia*.



CANARY ISLANDS

Length 12–16in (30–40cm)	Diet	Activity

Family LACERTIDAE	Species *Lacerta agilis*	Status Locally common

SAND LIZARD

The Sand Lizard is a very variable species with differences in patterning existing between geographical populations, between adults and juveniles, and between the sexes. In Europe the adult male (shown here) is usually bright green on the sides and brown and black on the back, but some may have a red back. Females are light brown with black and white spots all over the body and limbs. This lizard has a relatively large and powerful head, especially in males. In Britain, where it is a protected species, it is confined to sand dunes by the sea and is threatened by habitat destruction; the most northwesterly population, in Lancashire, is particularly at risk from development. Although the species is commonly called the Sand Lizard in Britain, in other parts of its range it may be known as the Agile Lizard.

• **OCCURRENCE** Britain to C. Asia. In sandy habitats, meadows, and embankments.



EUROPE, ASIA

• **REPRODUCTION** Lays 6–13 eggs.

• **SIMILAR SPECIES** Common Viviparous Lizard (*Lacerta vivipara*).

• **REMARK** This is Britain's rarest and most protected lizard.



Length 7–8¾in (18–22cm)	Diet	Activity

Family LACERTIDAE	Species *Lacerta lepida*	Status Locally common

EUROPEAN EYED LIZARD

This robust lizard is green with black flecks and rows of bright blue spots on the sides. Juveniles are olive-green, covered in numerous white spots, which may be edged with black. This is the largest lacertid lizard in Europe. When disturbed in dense vegetation, large specimens can be heard crashing through the bushes as they escape.

• **OCCURRENCE** N.W. Italy, S. France, Spain, and Portugal. In open woodland, vineyards, and olive groves.

• **REPRODUCTION** Lays 4–6 eggs.

• **SIMILAR SPECIES** North African Eyed Lizard (*Lacerta pater*).



EUROPE



Length 24–31in (60–80cm)	Diet	Activity

Family LACERTIDAE	Species *Podarcis lilfordi*	Status Locally common

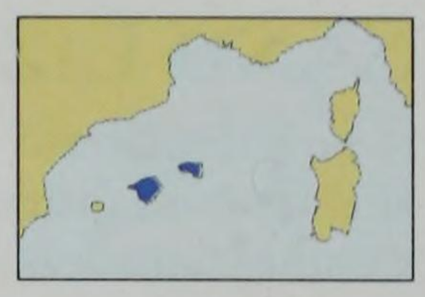
BALEARIC WALL LIZARD

This variable species may be brown with lengthwise bands of black spots and a green back. Some populations are black and may have light blue spots on the sides. Tiny, granular scales cover the body, and the head is robust and pointed.

• **OCCURRENCE** Majorca and Minorca (Balearic Islands), W. Mediterranean. In rocky, sparsely vegetated terrain.

• **REPRODUCTION** Live-bearing, 2–3 neonates.

• **SIMILAR SPECIES** Ibiza Wall Lizard (*Podarcis pityusensis*).



BALEARIC ISLANDS



Length 7–8¾in (18–22cm)	Diet	Activity

Family TEIIDAE	Species *Ameiva ameiva*	Status Common

COMMON AMEIVA

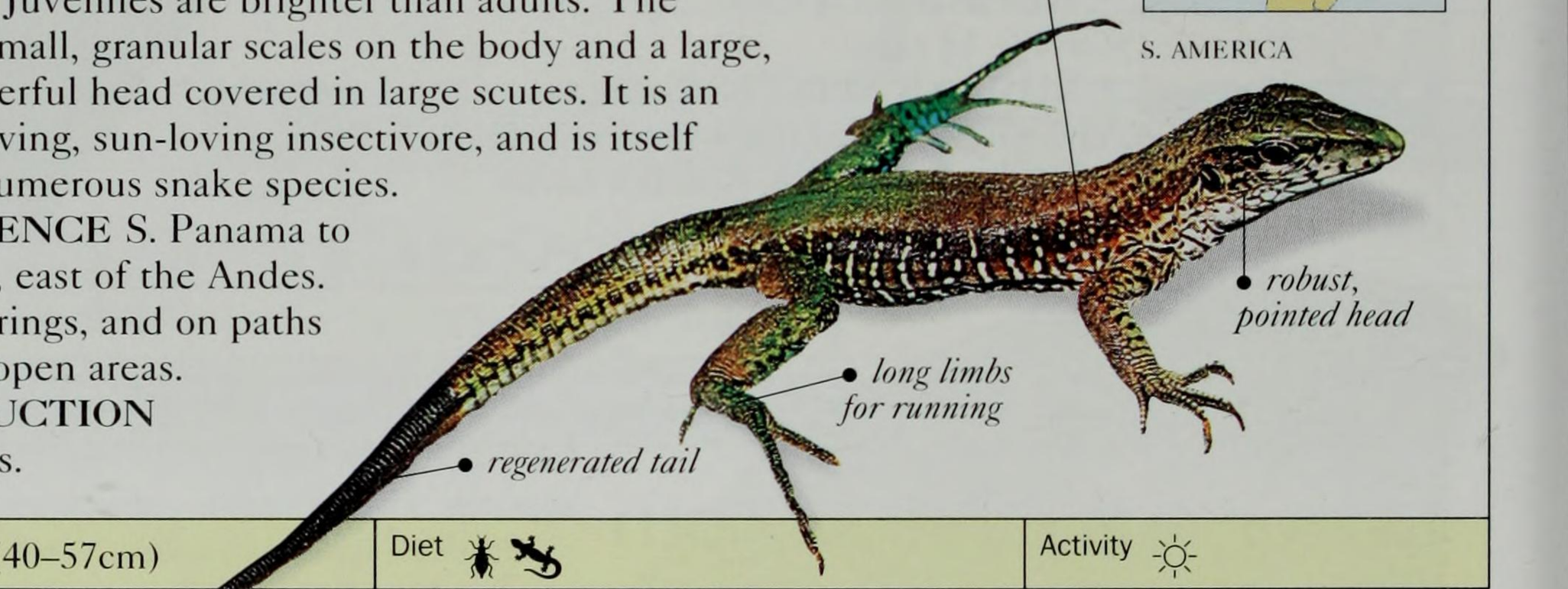
The most visible lizard in South America, the Ameiva is variably patterned with green and brown stripes and yellow spots. Juveniles are brighter than adults. The Ameiva has small, granular scales on the body and a large, pointed, powerful head covered in large scutes. It is an alert, fast-moving, sun-loving insectivore, and is itself the prey of numerous snake species.

• **OCCURRENCE** S. Panama to N. Argentina, east of the Andes. In forest clearings, and on paths and roads in open areas.

• **REPRODUCTION** Lays 1–9 eggs.



S. AMERICA



Length 16–23in (40–57cm)	Diet	Activity

Family TEIIDAE	Species *Bachia flavescens*	Status Rare

BACHIA

A small, slender brown lizard with tiny scales arranged in rings around the body, the Bachia resembles an amphisbaenian or worm-lizard (pp.101–103). Closer examination of the body reveals tiny, toeless fore- and hindlimbs – the only amphisbaenian with limbs is the Ajolote (*Bipes biporus*, p.103). The Bachia is able to jump along the ground by flicking its tail, which propels it rapidly forward.

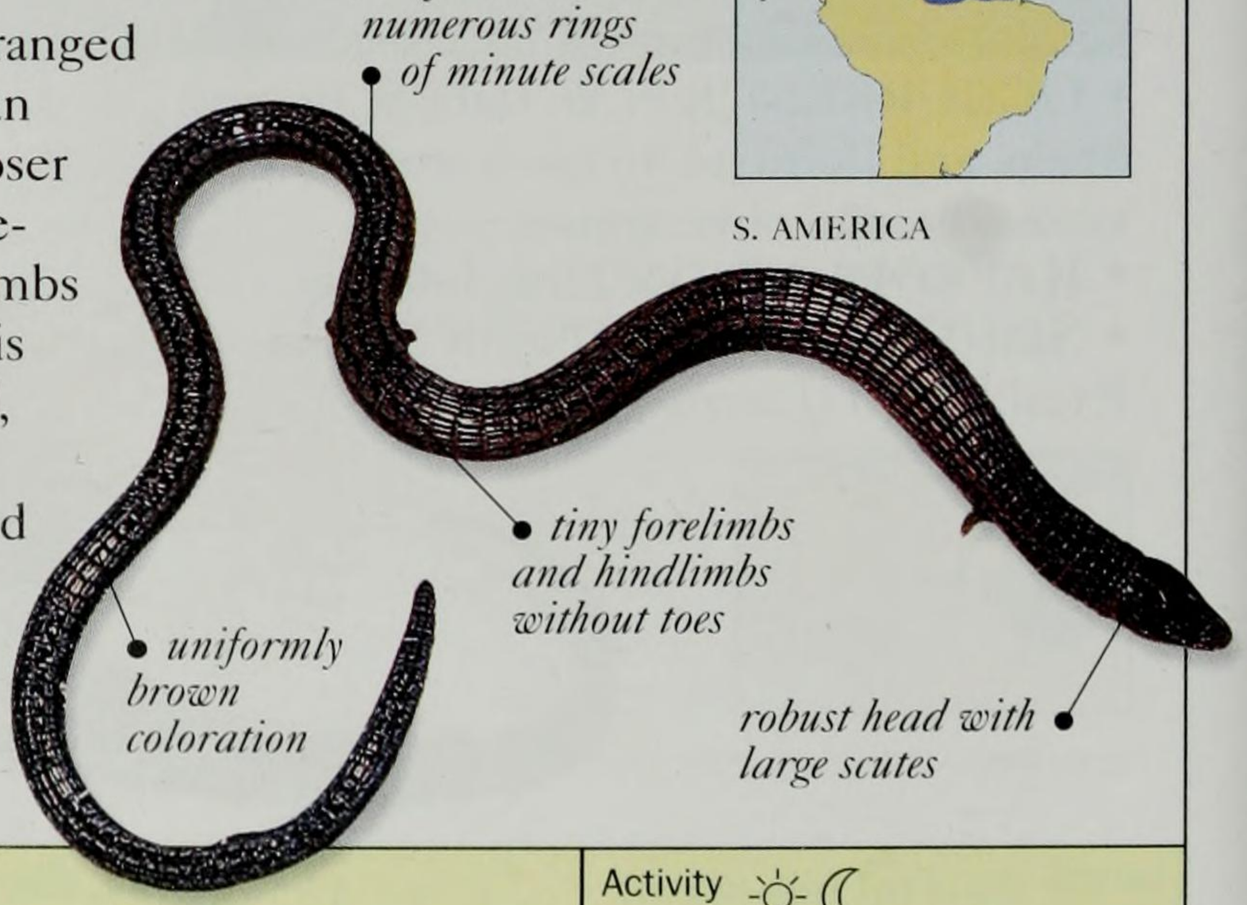
• **OCCURRENCE** Guyana, French Guiana, and N.E. Brazil. In grassland or forest near streams.

• **REPRODUCTION** Lays 1 egg.

• **SIMILAR SPECIES** Slevin's Worm-lizard (*Amphisbaena slevini*).



S. AMERICA



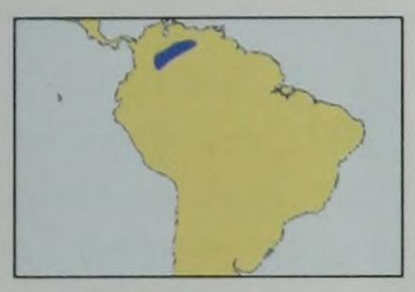
Length 6¾–8in (17–20cm)	Diet	Activity

Family TEIIDAE	Species *Cnemidophorus gramivagus*	Status Locally common

LLANOS WHIPTAIL

As a juvenile, this species is green to brown with four fine white to yellow stripes down the back. Adults may develop a broad, dark central stripe and large white or yellow-green spots on the sides. This is a fast-moving savanna lizard, permanently alert for predators that include snakes, larger lizards, and birds.

• **OCCURRENCE** Colombia and Venezuela. On open, grassy plains (llanos).



S. AMERICA

• **REPRODUCTION** Lays 1–5 eggs.

• **SIMILAR SPECIES** Ribboned Whiptail (*Cnemidophorus lemniscatus*).



Length 6¾–11in (17–28cm)	Diet	Activity

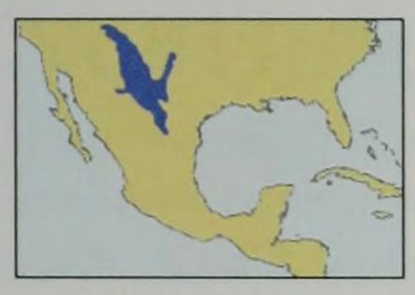
Family TEIIDAE	Species *Cnemidophorus uniparens*	Status Common

DESERT GRASSLAND WHIPTAIL

This is a small, blue-green to olive-green lizard with six yellow or white stripes along the back. It is the prey of numerous snakes and hawks and, if threatened, it retreats to sandy burrows beneath desert bushes.

• **OCCURRENCE** S. US and N. Mexico. In desert and mesquite scrub.

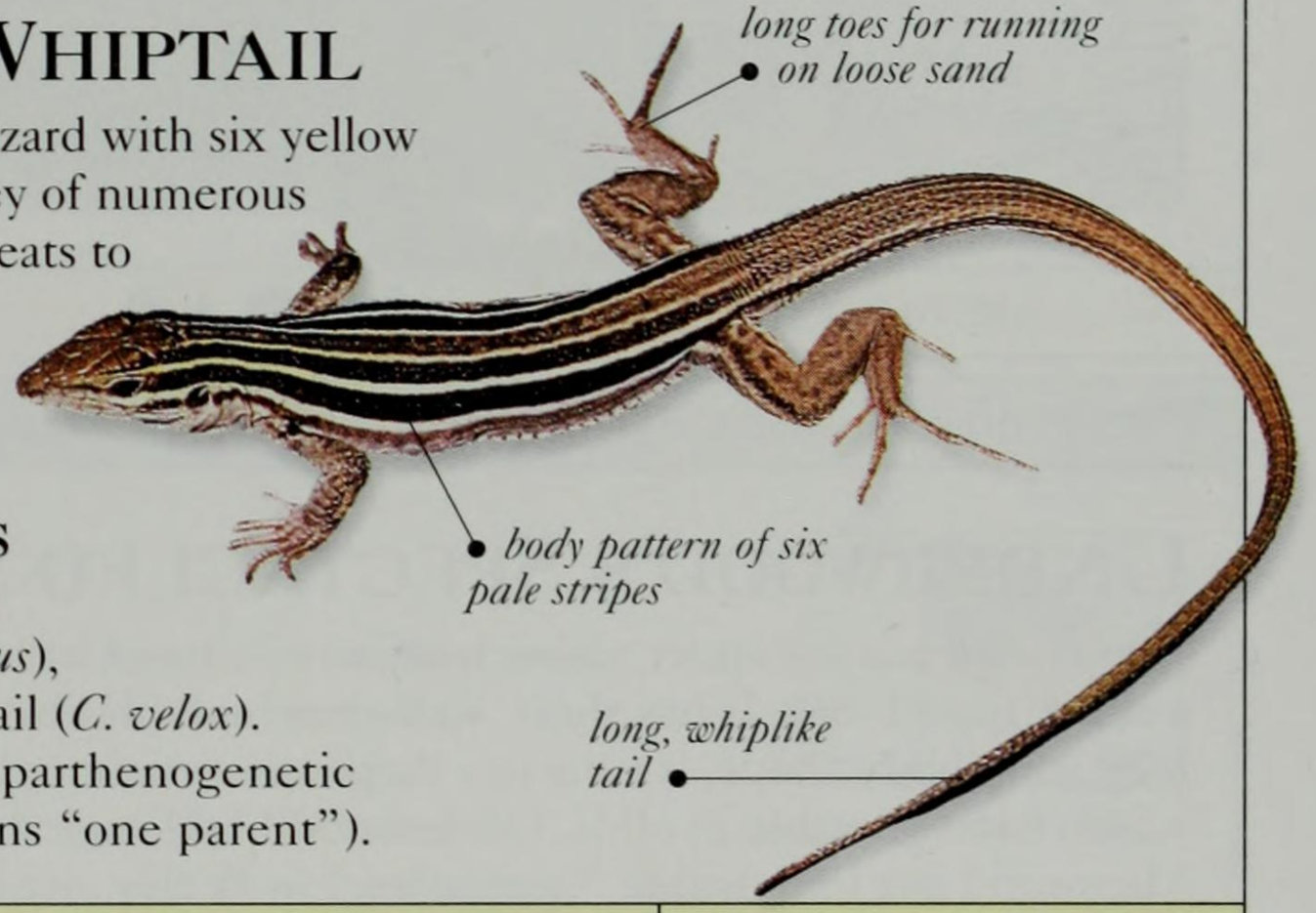
• **REPRODUCTION** Lays 1–4 eggs.



N. AMERICA

• **SIMILAR SPECIES** Little Striped Whiptail (*Cnemidophorus inornatus*), Plateau Striped Whiptail (*C. velox*).

• **REMARK** This is a parthenogenetic species (*uniparens* means "one parent").



Length 6–8¾in (15–22cm)	Diet	Activity

Family TEIIDAE	Species *Crocodilurus lacertinus*	Status Rare

CROCODILE TEGU

Dark-edged orange spots pattern the sides, limbs, and tail of this gray lizard. The lips and throat are white with wavy black lines, and the large eyes have orange irises. This is a semiaquatic lizard, and its flat tail with a slightly raised double keel helps it move through the water.

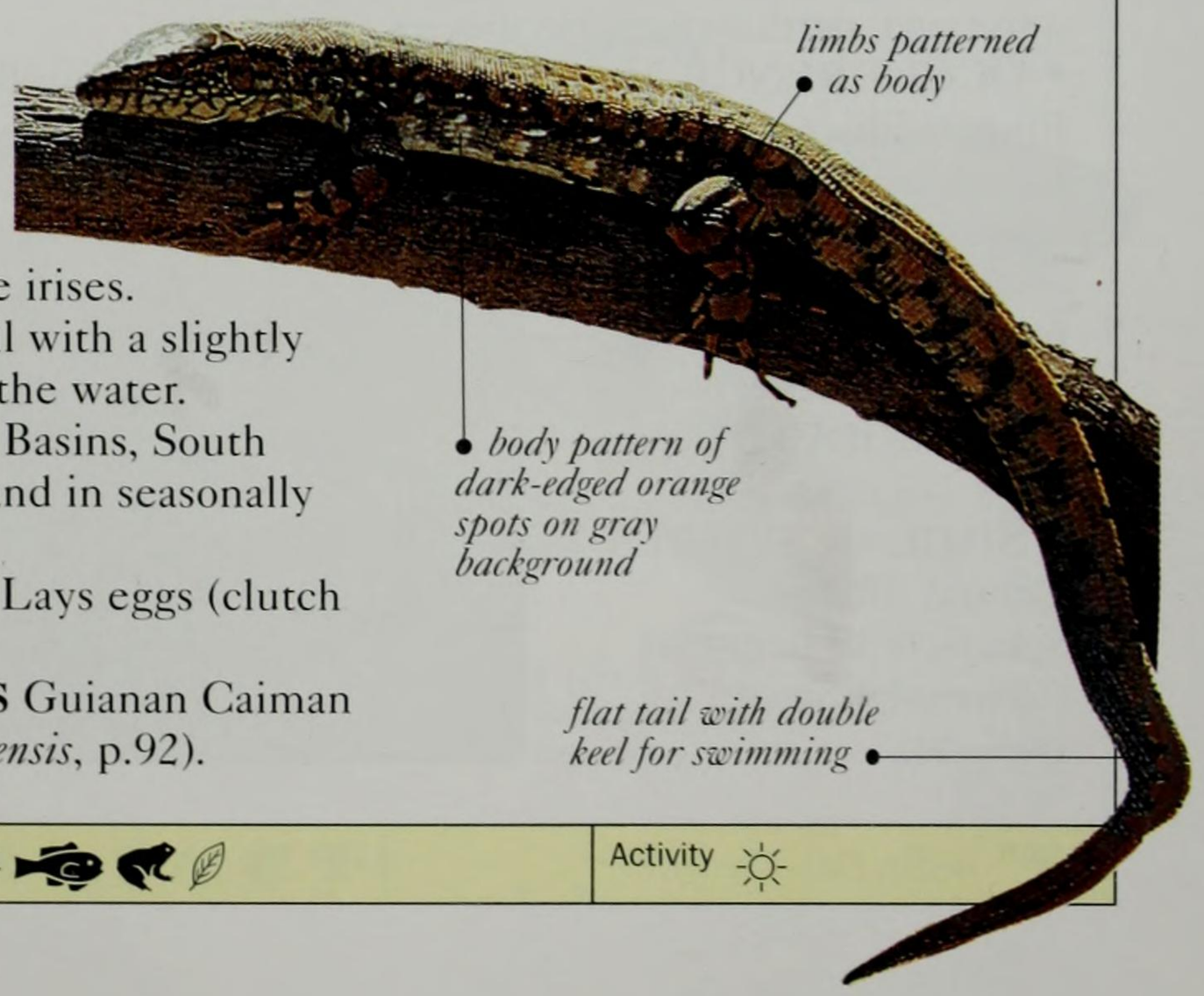
• **OCCURRENCE** Amazon and Orinoco Basins, South America. Along rivers and in seasonally flooded forest.



S. AMERICA

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Guianan Caiman Lizard (*Dracaena guianensis*, p.92).



Length 21½–28in (55–70cm)	Diet	Activity

Family TEIIDAE	Species *Dracaena guianensis*	Status Endangered

GUIANAN CAIMAN LIZARD



S. AMERICA

This powerful lizard has a large, robust head with strong, crushing jaws and molarlike teeth for feeding on aquatic snails. The tongue expels the indigestible pieces of shell. The coloration of the Guianan Caiman Lizard is primarily bright green or brown, with an orange head. Juveniles are a brighter green than adults. The scales of the neck are raised and may afford some protection, while many of those on the back and tail bear strong keels. This lizard resembles a Spectacled Caiman (*Caiman crocodilus*, p.192), except for its broad, relatively short head, which is similar to that of the Northern Black Tegu (*Tupinambis teguixin*, opposite). In the dry season, the Guianan Caiman Lizard is reported to climb trees in search of invertebrates and eggs.

• **OCCURRENCE** Amazon Basin, South America. In swamps, rivers, and flooded forest.

• **REPRODUCTION** Lays 2 eggs.

• **SIMILAR SPECIES** Paraguayan Caiman Lizard (*Dracaena paraguayensis*).

broad, short orange head contains strong, crushing jaws

green or brown body coloration

Length 3–3½ft (0.9–1.1m)	Diet	Activity

Family TEIIDAE	Species *Gymnophthalmus underwoodi*	Status Locally common

UNDERWOOD'S SPECTACLED MICROTEIID



S. AMERICA

This lizard has a slender, shiny body in two tones of brown and resembles a skink (pp.81–86). It has short, well-developed limbs and, owing to its long, slim body shape, it runs in a serpentine motion. Unlike most lizards, which have movable eyelids, Underwood's Spectacled Microteiid has immovable "spectacles," or brilles, over its eyes. The brilles protect the eyes and, being transparent, they also permit vision. This feature is considered an advanced characteristic in lizards. Underwood's Spectacled Microteiid is an exclusively unisexual, parthenogenetic species.

• **OCCURRENCE** N. and N.E. Brazil, Guyana, Surinam, French Guiana, E. Venezuela, and Trinidad. In open forest and savanna, often found in leaf-litter on forest floors.

• **REPRODUCTION** Lays 2–3 eggs.

• **SIMILAR SPECIES** Central American Spectacled Microteiid (*Gymnophthalmus speciosus*).

long, slender, two-tone brown body

smooth, shiny, skinklike skin



Length 4–5in (10–13cm)	Diet	Activity

Family TEIIDAE	Species *Proctoporus shrevei*	Status Rare

LUMINOUS LIZARD



TRINIDAD

The Luminous Lizard is uniform olive-brown, with rough, keeled scales, short limbs, and a long, pointed head. Adult males are bright red below and possess a series of dark-edged, white-centered, portholelike spots along the sides. In the 1930s, the British naturalist Ivan Sanderson captured an adult male in a dark, remote cave in the mountains of northern Trinidad and claimed that its white markings glowed brightly for a few moments. His claims were discounted. However, research on a male captured more recently (in 1999) suggests that although it may not actually produce light, it does seem capable of absorbing and reemitting light. Its apparent luminescence may be a form of defense.

- **OCCURRENCE** Aripo Caves, N. Trinidad. In rainforest caves.
- **REPRODUCTION** Lays 1 egg.
- **SIMILAR SPECIES** Keeled Microteiid (*Leposoma percarinatum*).



Length 4–5in (10–13cm)	Diet	Activity

Family TEIIDAE	Species *Tupinambis teguixin*	Status Common

NORTHERN BLACK TEGU



S. AMERICA

The Northern Black Tegu is a large, terrestrial lizard. Coloration is generally copper-brown, with a series of broad, broken, irregular black or dark brown bars and dark speckling in between. Adult specimens become considerably darker with age. The limbs are long and powerful for running (juveniles can run on their hindlegs alone), and the long, thick tail makes a useful defensive weapon. Like monitor lizards (*Varanus* species, pp.98–100), *Tupinambis* species are large and carnivorous. They are active predators of most organisms, but they also steal the eggs of birds and caimans and feed on carrion.

- **OCCURRENCE** Amazon and Orinoco Basins, South America. In forest and savanna.
- **REPRODUCTION** Lays 4–32 eggs.
- **SIMILAR SPECIES** Teiu (*Tupinambis merianae*).



Length 2½–3ft (0.8–1m)	Diet	Activity

Family ANGUIDAE	Species *Anguis fragilis*	Status Common

SLOW WORM

This small legless lizard is brown or gray and smooth-scaled. Females usually possess a fine vertebral stripe and dark sides, and adult males (shown here) often have blue spots on the sides. Juveniles are golden brown with a dark vertebral stripe, sides, and underside. Slow Worms resemble snakes, but they can shed their tails and have movable eyelids like most other lizards.

• **OCCURRENCE** British Isles and Scandinavia to Caspian Sea. In woodland, on grassy banks along roads and railroads, and in gardens.

• **REPRODUCTION** Live-bearing, 4–28 neonates.



EUROPE



Length 16–19in (40–48cm)	Diet	Activity

Family ANGUIDAE	Species *Elgaria kingii*	Status Locally common

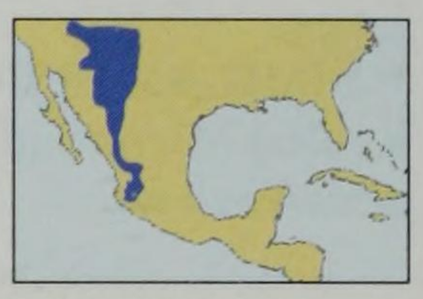
SONORAN ALLIGATOR LIZARD

This long lizard has a pointed head, a long tail, and short limbs. The body is covered in small, square scales, with a fold of small granular scales on the lower sides. It is pale brown, with broad, darker brown cross-bars edged with black, and with scattered black spots. The Sonoran Alligator Lizard is primarily terrestrial, hiding under timber by day, but it also climbs low bushes.

• **OCCURRENCE** S.W. US and N.W. Mexico. On rocky, wooded montane slopes.

• **REPRODUCTION** Lays 9–15 eggs.

• **SIMILAR SPECIES** Panamint Alligator Lizard (*Elgaria panamintina*).



N. AMERICA



Length 8–10in (20–25cm)	Diet	Activity

Family ANGUIDAE	Species *Ophisaurus apodus*	Status Common

SCHELTOPUSIK

The Scheltopusik is Europe's largest legless lizard. It is yellow-brown or dark brown, with a pale head, and is covered in large, square scales, with a fold of smaller scales along the sides of the body. This lizard superficially resembles a snake but its head is lizardlike, with movable eyelids and ear openings, and it lacks the fluid movements of a true snake. Close examination of the cloaca reveals the remnants of the hindlimbs.

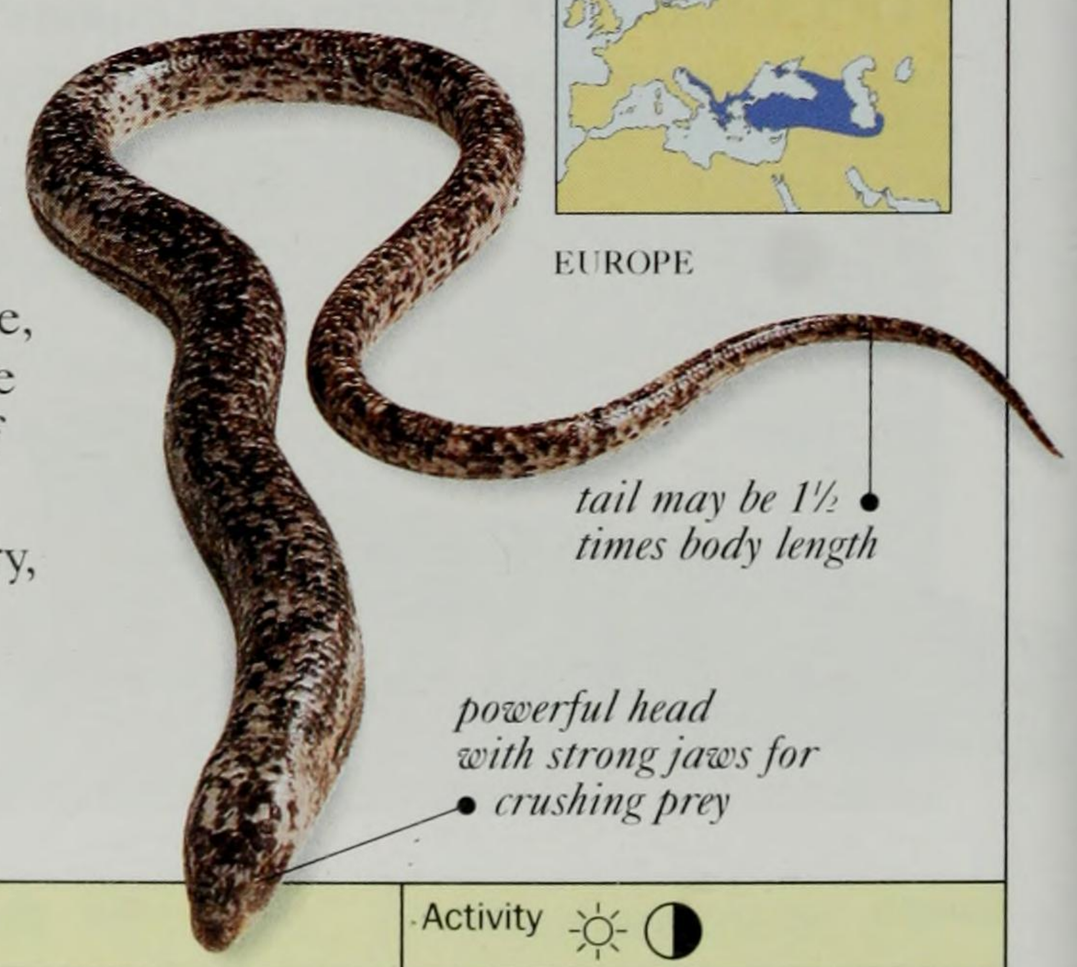
• **OCCURRENCE** Balkans to the Caspian Sea. On dry, rocky slopes and in woodland.

• **REPRODUCTION** Lays 8–10 eggs.

• **SIMILAR SPECIES** American glass lizards (*Ophisaurus* species).



EUROPE



Length 3–4ft (1–1.2m)	Diet	Activity

Family ANNIELLIDAE	Species *Anniella geroninensis*	Status Rare

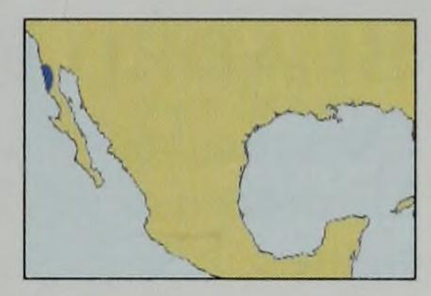
BAJA CALIFORNIA LEGLESS LIZARD

The Baja California Legless Lizard is silver to light brown, with smooth scales and a narrow vertebral stripe. The sides are white with a series of fine black longitudinal stripes. The small head is indistinct from the neck, and the eyelids are movable, as in most lizards; ear openings, usually present in lizards, are absent. These lizards hunt invertebrates just beneath the surface of the sand.

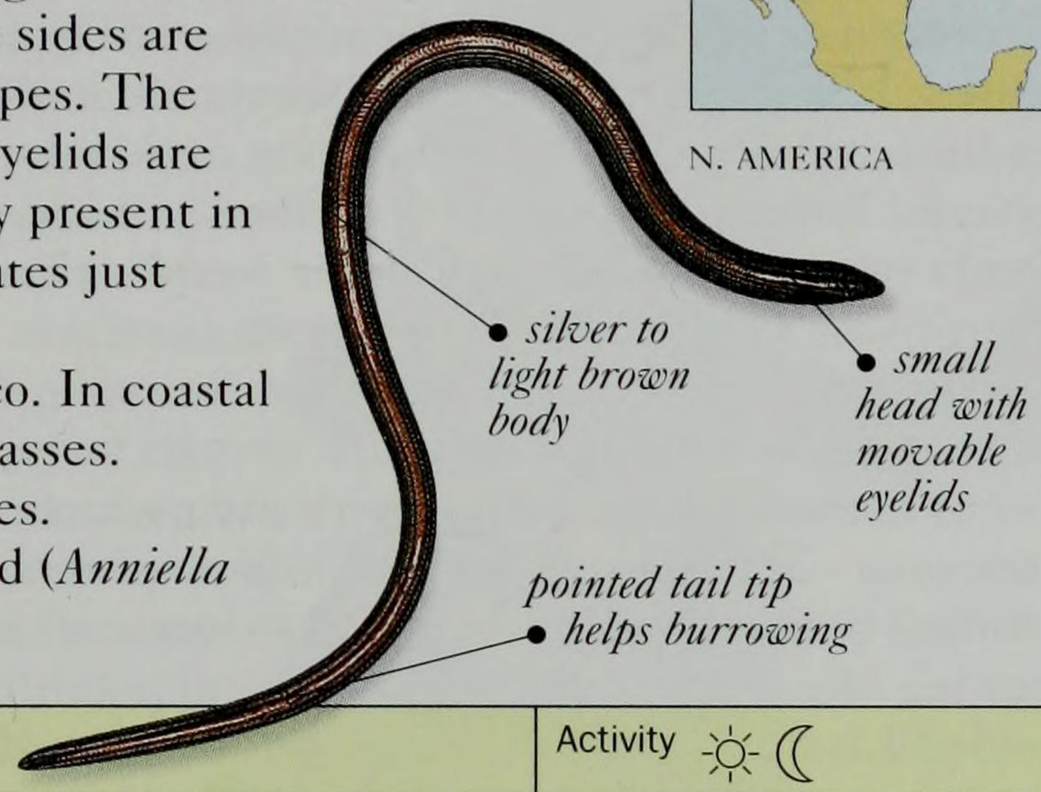
• **OCCURRENCE** N.W. Baja California, Mexico. In coastal sand dunes and sand flats stabilized by coarse grasses.

• **REPRODUCTION** Live-bearing, 1–2 neonates.

• **SIMILAR SPECIES** California Legless Lizard (*Anniella pulchra*), Slow Worm (*Anguis fragilis*, opposite).



N. AMERICA



Length 4–6in (10–15cm)	Diet	Activity

Family XENOSAURIDAE	Species *Shinisaurus crocodilurus*	Status Endangered

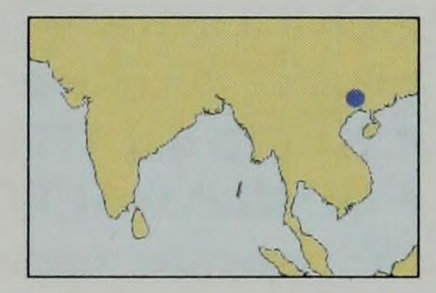
CHINESE CROCODILE LIZARD

The Chinese Crocodile Lizard (juvenile shown here) has a wrinkled skin consisting of many strongly keeled scales. It is red to yellow-brown, with dark brown on the back and a starburst of dark lines radiating from the eye. Although primarily aquatic, this lizard also climbs into low bushes to bask.

• **OCCURRENCE** Guangxi, S. China. In stony montane forest streams.

• **REPRODUCTION** Live-bearing, 3–8 neonates.

• **SIMILAR SPECIES** Borneo Earless Monitor (*Lanthanotus borneensis*, below).



ASIA



Length 16–18in (40–46cm)	Diet	Activity

Family LANTHANOTIDAE	Species *Lanthanotus borneensis*	Status Rare

BORNEO EARLESS MONITOR

The semiburrowing Borneo Earless Monitor is uniform dark brown in color. Several rows of raised, strongly keeled scales run down the back onto the tail, with numerous small granular scales in between. The eyes are small with functional eyelids but, as the name suggests, ear openings are absent.



BORNEO

• **OCCURRENCE** Sarawak, Borneo. In riverine forest and rainforest.

• **REPRODUCTION** Lays 6 eggs.



Length 16–17½in (40–44cm)	Diet	Activity

Family HELODERMATIDAE	Species *Heloderma horridum*	Status Rare

BEADED LIZARD ☠



N. & C. AMERICA

Occurring along the Pacific coast from Guatemala to the northwestern Mexican state of Sonora, the Beaded Lizard is easily recognized, if rarely sighted. It has a stoutly built body, covered in dark brown and yellow, beadlike scales, with a relatively long neck, a rounded, slender head, powerful limbs with sharp-clawed feet, and a long, tapering tail. It is one of only two venomous lizards in the world – the other being the related, desert-living Gila Monster (*Heloderma suspectum*, opposite). The venom apparatus is situated in the lower jaw (in snakes it is in the upper jaw). Unlike snakes, the Beaded Lizard uses its venom primarily for defense. It does not need it for dealing with prey, which is comparatively small and innocuous – the largest consist of infant rodents, fledgling birds, and eggs. A forked tongue enables the lizard to locate its food. Its tenacious, chewing bite is exceedingly painful, and potentially fatal to humans. Beaded Lizards are often diurnal, but they avoid hot weather by remaining underground in their burrows during the day, and becoming nocturnal. They also frequently climb trees. Unpatterned, uniformly black-brown specimens occur in southern Mexico.

• **OCCURRENCE** W. Mexico and Guatemala. In tropical, deciduous woodland and thornscrub.

• **REPRODUCTION** Lays 8–10 eggs.

• **SIMILAR SPECIES** Gila Monster (*H. suspectum*, opposite).

• **REMARK** The Beaded Lizard is known to Mexicans as "Escorpion."

longer head, neck, and tail than Gila Monster, opposite

body covered in rounded, beadlike scales

powerful limbs with long claws

long, tapering tail

lower jaw with venom glands and venom-delivering teeth

Length 2–3ft (0.7–1m)	Diet	Activity

Family HELODERMATIDAE	Species *Heloderma suspectum*	Status Endangered

GILA MONSTER ☠

Named after the Gila River in Arizona, this black-and-pink or black-and-yellow, tapestry-skinned species is one of the most distinctive lizards of North America. Distributed from Utah to northern Sinaloa in Mexico, its range slightly overlaps that of the more tropical Beaded Lizard (*Heloderma horridum*, opposite). It is smaller and less robust than its relative, with a shorter neck, shorter tail, and more rounded head. Like the Beaded Lizard, it is venomous, with the venom mechanism in the lower jaw, and it has a similar diet. Its sluggish appearance is deceptive since a predatory approach may be countered with a sudden turn and a rapid bite, resulting in a tenacious, chewing grip and a potentially serious injection of venom. There are two subspecies. The more northern of these, the Banded Gila Monster (*H. suspectum cinctum*, shown here), has a more defined pattern than the southern Reticulated Gila Monster (*H. suspectum suspectum*).

• **OCCURRENCE** S.W. US and N.W. Mexico. In desert and dry grassland.

• **REPRODUCTION** Lays 4–7 eggs.

• **SIMILAR SPECIES** Beaded Lizard (*H. horridum*, opposite).

• **REMARK** The Gila Monster is a protected species and must not be killed, collected, or molested.

shorter head, neck, and tail than Beaded Lizard, opposite

rounded, beadlike scales cover body and limbs

pink or yellow coloring with black cross-bands

powerful limbs with long claws

tail can act as reserve food store

large, broad head with venom apparatus in lower jaw

snakelike forked tongue



N. AMERICA

Length 12–20in (30–50cm)	Diet	Activity

Family VARANIDAE	Species *Varanus albigularis*	Status Common

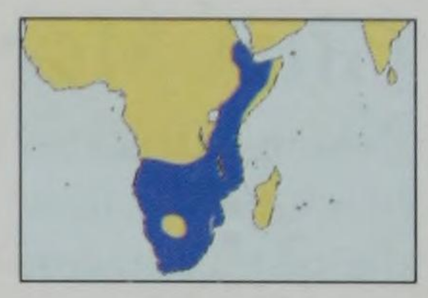
WHITE-THROATED MONITOR LIZARD

This short-headed lizard is gray-brown with pale yellow, dark-edged markings. It climbs well and travels long distances to search for a mate or food, which consists of a wide variety of prey, including insects, birds and birds' eggs, and venomous snakes. This monitor lizard uses its long, rough tail as a defensive whip, and it can deliver a serious bite.

• OCCURRENCE E. and S. Africa. In savanna woodland.

• REPRODUCTION Lays 8–50 eggs.

• SIMILAR SPECIES Bosc Monitor Lizard (*Varanus exanthematicus*).



AFRICA



Length 6–7ft (1.9–2.1m)	Diet	Activity

Family VARANIDAE	Species *Varanus komodoensis*	Status Locally common

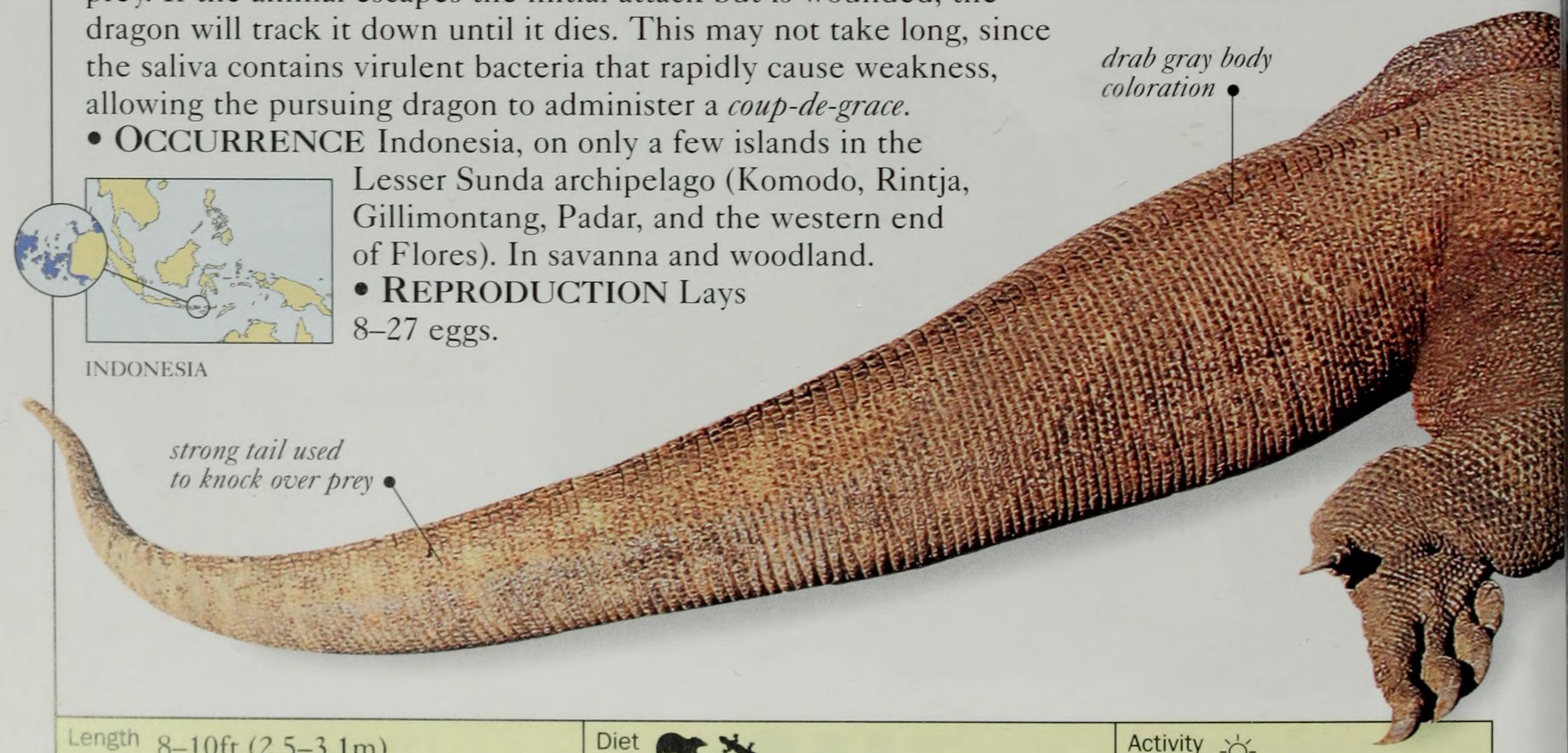
KOMODO DRAGON

The largest and heaviest lizard in the world, the Komodo Dragon is found on a few small, arid islands in Indonesia. It has a massive body, carried on sturdy legs, and a broad, powerful head. Adult Komodos are a fairly drab gray color but juveniles, which adopt a more arboreal existence for their own safety, are more brightly patterned. The Komodo Dragon is a formidable predator, hunting large mammals such as pigs, deer, horses, and buffalo. Before these were introduced by man, it is believed to have fed on a now-extinct pygmy elephant. Birds and reptiles, including smaller dragons, also form part of its diet, and it is known to have taken humans. It has a reputation for feeding on carrion, but since it is the only large terrestrial carnivore on the islands, most carrion is the result of dragon kills. When hunting, the Komodo Dragon ambushes large prey. If the animal escapes the initial attack but is wounded, the dragon will track it down until it dies. This may not take long, since the saliva contains virulent bacteria that rapidly cause weakness, allowing the pursuing dragon to administer a *coup-de-grace*.

• OCCURRENCE Indonesia, on only a few islands in the Lesser Sunda archipelago (Komodo, Rintja, Gillimontang, Padar, and the western end of Flores). In savanna and woodland.

• REPRODUCTION Lays 8–27 eggs.

INDONESIA



Length 8–10ft (2.5–3.1m)	Diet	Activity

Family VARANIDAE	Species *Varanus dumerilii*	Status Rare

DUMERIL'S MONITOR LIZARD

The adult of this species is light brown, with dark bars across its back. Juveniles have a more striking coloration: they are black, with bright yellow bars across the body and vivid orange on top of the head. Both adults and juveniles have a dark stripe running backward from each eye. This monitor lizard climbs well and enters water if disturbed.

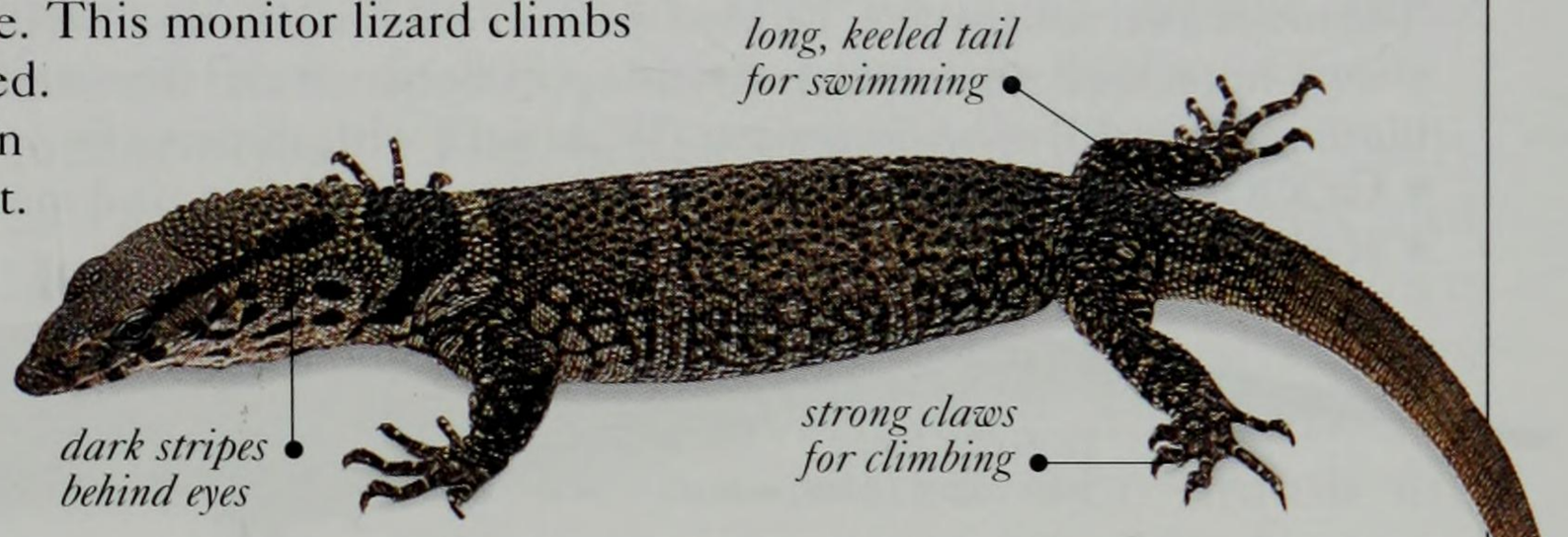
• **OCCURRENCE** S.E. Asia. In mangrove swamps and rainforest.

• **REPRODUCTION** Lays 12–23 eggs.

• **SIMILAR SPECIES** Indo-Malay Water Monitor Lizard (*Varanus salvator*).



ASIA

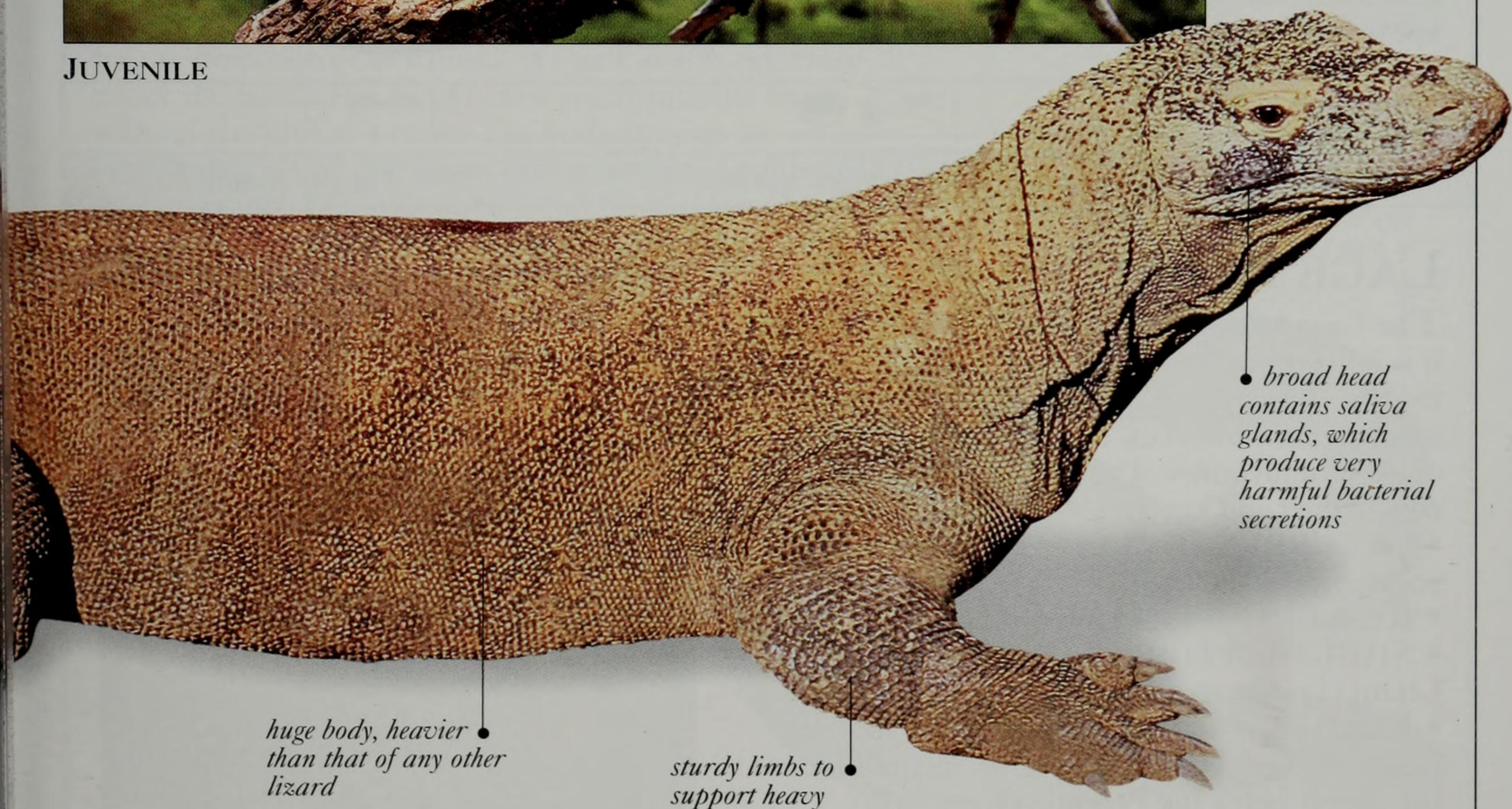


Length 3–4ft (1–1.3m)	Diet	Activity



- *brighter patterning than adult*
- *juveniles usually found in trees*

JUVENILE



- *broad head contains saliva glands, which produce very harmful bacterial secretions*
- *huge body, heavier than that of any other lizard*
- *sturdy limbs to support heavy body*

Family VARANIDAE	Species *Varanus niloticus*	Status Common

NILE MONITOR LIZARD

This large monitor lizard has a slender body, a long, keeled tail for swimming, and a pointed head. Juveniles are yellow below and black above, with yellow spots across the back and yellow bars across the tail. Adults are often uniform gray-black, except for the tail bars. There are two subspecies: *Varanus niloticus niloticus* (E. and S. Africa), shown here, with six to nine rows of spots between the fore- and hindlimbs, and *V. niloticus ornatus* (W. Africa), with three to five rows.

• **OCCURRENCE** Sub-Saharan Africa. In rivers, lakes, and marshes.

• **REPRODUCTION** Lays 20–60 eggs.



AFRICA



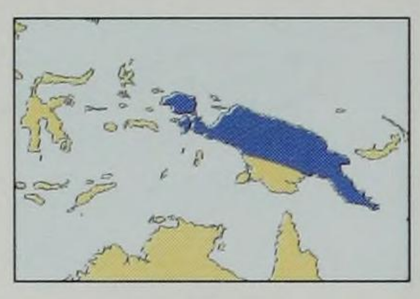
Length 4½–6½ft (1.4–2m)	Diet	Activity

Family VARANIDAE	Species *Varanus prasinus*	Status Rare

EMERALD TREE MONITOR LIZARD

This truly arboreal lizard is specially adapted for life in the trees. It has a very long prehensile tail. The vivid green cryptic coloration, sometimes with fine black bars, gives excellent camouflage in the canopy vegetation.

• **OCCURRENCE** New Guinea. In rainforest and on plantations.



NEW GUINEA

• **REPRODUCTION** Lays 2–5 eggs.

• **SIMILAR SPECIES** Queensland Blue-nosed Monitor Lizard (*Varanus teriae*).



Length 2½–3ft (0.8–1m)	Diet	Activity

Family VARANIDAE	Species *Varanus varius*	Status Locally common

LACE MONITOR LIZARD

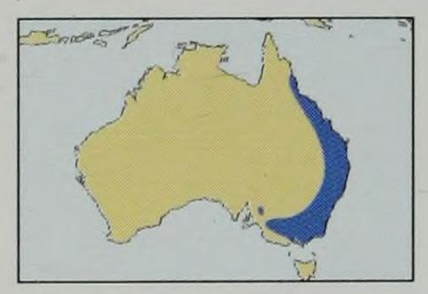
The Lace Monitor is an arboreal lizard, although it is equally adapted to life on the ground. It is usually blue-gray with yellow bars consisting of small spots or blotches. Patterning is most evident in juveniles. The long tail is laterally compressed and keeled along the upper edge.

• **OCCURRENCE** E. Australia. In rainforest and dry woodland.

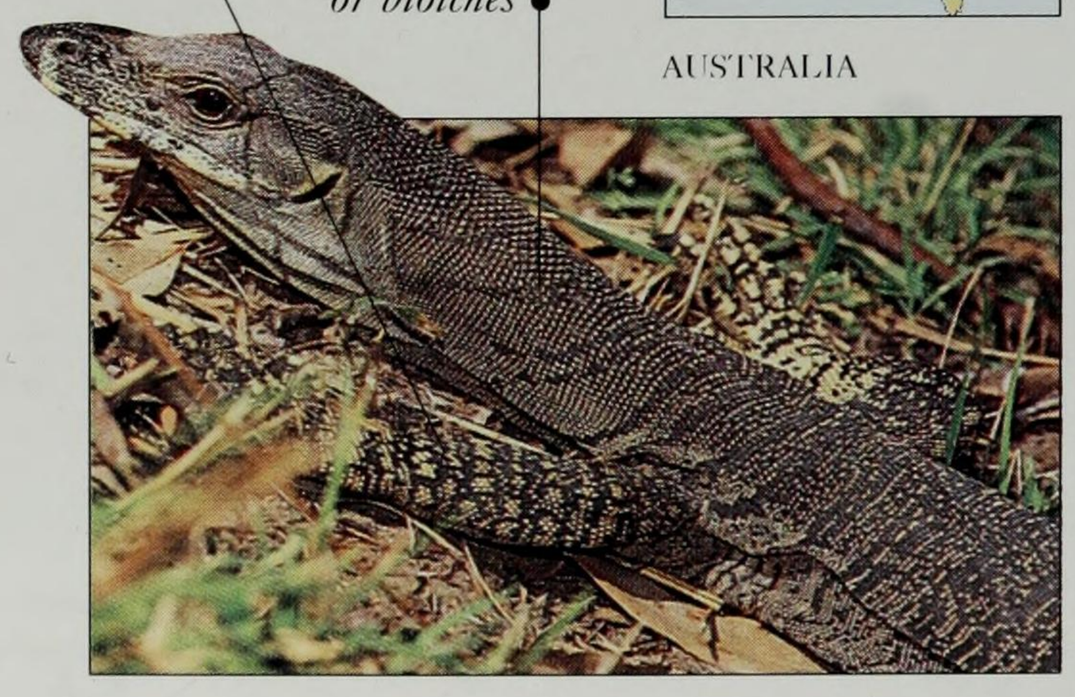
• **REPRODUCTION** Lays 6–12 eggs.

• **SIMILAR SPECIES** Spotted Tree Monitor Lizard (*Varanus scalaris*).

• **REMARK** The Lace Monitor is the second largest of the 500 lizard species in Australia, the largest being the Perentie (*V. giganteus*).



AUSTRALIA



Length 5–6½ft (1.5–2m)	Diet	Activity

AMPHISBAENIANS

THE AMPHISBAENIANS, or worm-lizards, were once considered a family within the lizards. However, they are now considered different enough to form an entirely separate group (suborder Amphisbaenia), distinct from both lizards and snakes. Authorities place the 140 known species variously in two, three, or four families (in this book, they are treated as four).

Amphisbaenians occur in South America, Florida, southern Europe, north Africa, tropical Africa, and the Middle East. They live almost entirely underground, so they are seldom seen on the surface, except after rain.

Most amphisbaenians have long, slender, cylindrical bodies and possess extremely short, often truncated, tails. Indeed, the tail is so short and bluntly rounded that in Brazil these creatures are known as the "cobras de duas cabeças," meaning "snakes with two heads." They lack limbs, except for species in the unusual genus *Bipes* (p.103), which have forelimbs.

The scales covering the entire body and tail of amphisbaenians are tiny and are arranged in a series of rings, known as annuli; these make amphisbaenians superficially resemble earthworms, but they are not related. The annuli are sometimes interrupted by a long, indented fold that runs along the sides of the body. The armored head is ideal for burrowing, and the mouth and jaw are small. Both the ears and the eyes, which are vestigial areas of dark pigmentation, are hidden beneath large transparent scales.

Family AMPHISBAENIDAE	Species *Amphisbaena alba*	Status Unknown

RED WORM-LIZARD

The largest of the amphisbaenians, the Red Worm-lizard is rarely encountered above ground, except after heavy rain. The sturdy, armored white head has tiny eyes and ears, which are adapted for the detection of vibrations. A small mouth is located under the head. The head runs directly into the body without any hint of a neck. The body consists of numerous rings of tiny scales that resemble the annuli of an earthworm. The coloration is red-brown above, paler below, but without specific patterning. The Red Worm-lizard is most often found near the nests of large leaf-cutter ants because it feeds on the beetles that live in the ant-nest refuse areas.



S. AMERICA

- **OCCURRENCE** N. South America. In rainforest.
- **REPRODUCTION** Lays eggs (clutch size unknown).
- **SIMILAR SPECIES** Slevin's Worm-lizard (*Amphisbaena slevini*).



Length 20–21½in (50–55cm)	Diet	Activity

Family AMPHISBAENIDAE	Species *Amphisbaena fuliginosa*	Status Common

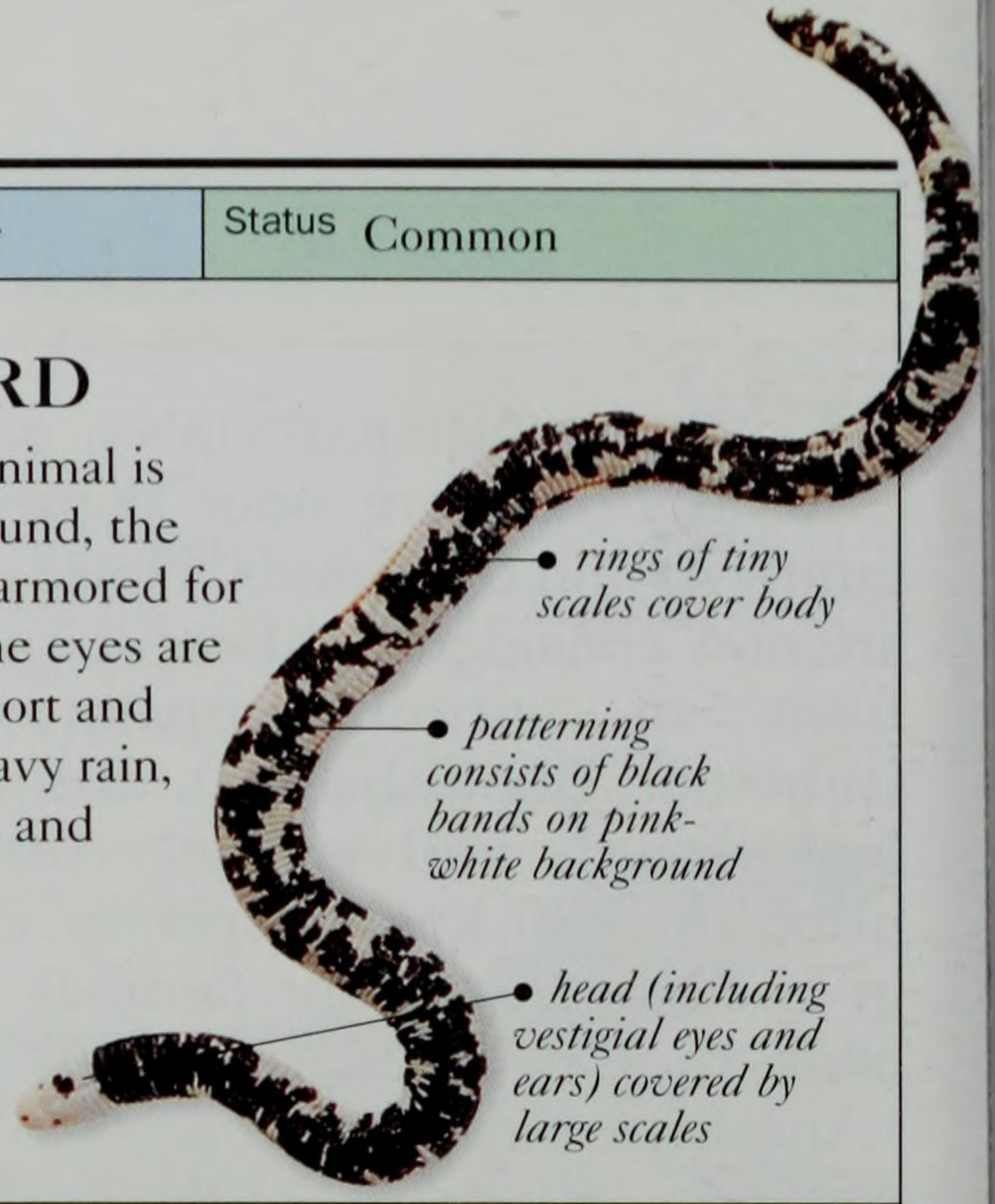
BLACK-AND-WHITE WORM-LIZARD

The most easily recognized amphisbaenian, this burrowing animal is patterned with irregular black bands on a pink-white background, the pattern often fragmenting on the underside. Its robust head, armored for burrowing, is usually pink-white with a central black spot. The eyes are small pigmented areas under transparent scales. The tail is short and terminates abruptly. Usually seen above ground only after heavy rain, this amphisbaenian feeds on invertebrates and lays its eggs in ants' nests.



S. AMERICA

- **OCCURRENCE** South America. In rainforest.
- **REPRODUCTION** Lays eggs (clutch size unknown).



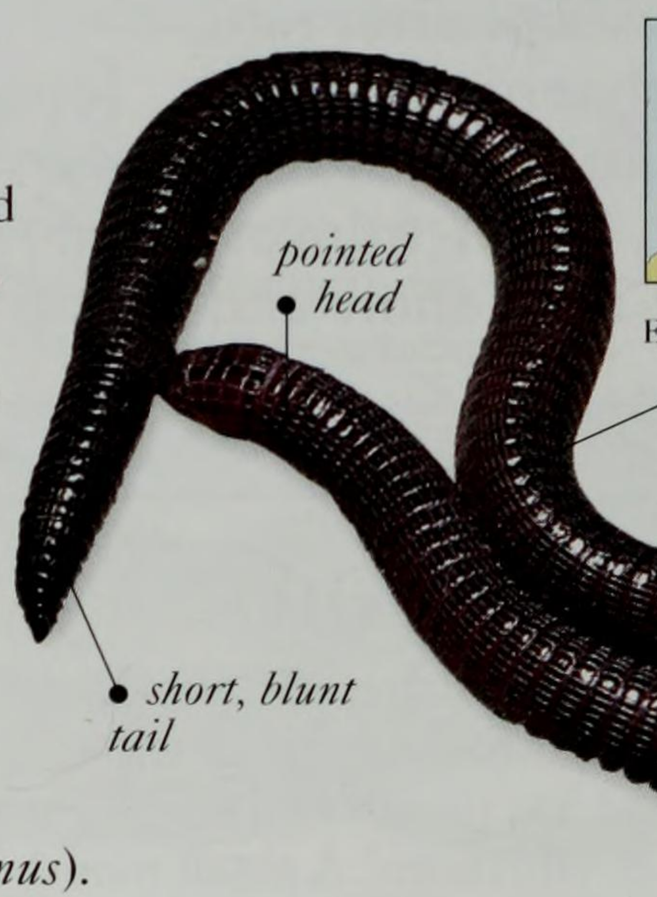
Length 12–17½in (30–45cm)	Diet	Activity

Family AMPHISBAENIDAE	Species *Blanus cinereus*	Status Locally common

IBERIAN WORM-LIZARD

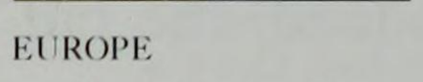
The only European amphisbaenian is yellow to brown or black, sometimes speckled with pink, and with a paler underside. It resembles an earthworm, with a small, pointed head for digging and a body ringed with rows of tiny, square scales. Rarely seen above ground in daylight except after heavy rain, it is most likely to be uncovered when plants are dug up, wood piles moved, or leaf-litter disturbed.

- **OCCURRENCE** Spain and Portugal. In sandy soil and woodland leaf-litter.
- **REPRODUCTION** Lays 1 egg.
- **SIMILAR SPECIES** Mettetel's Worm-lizard (*Blanus mettetali*), Tingitana Worm-lizard (*B. tingitanus*).





EUROPE



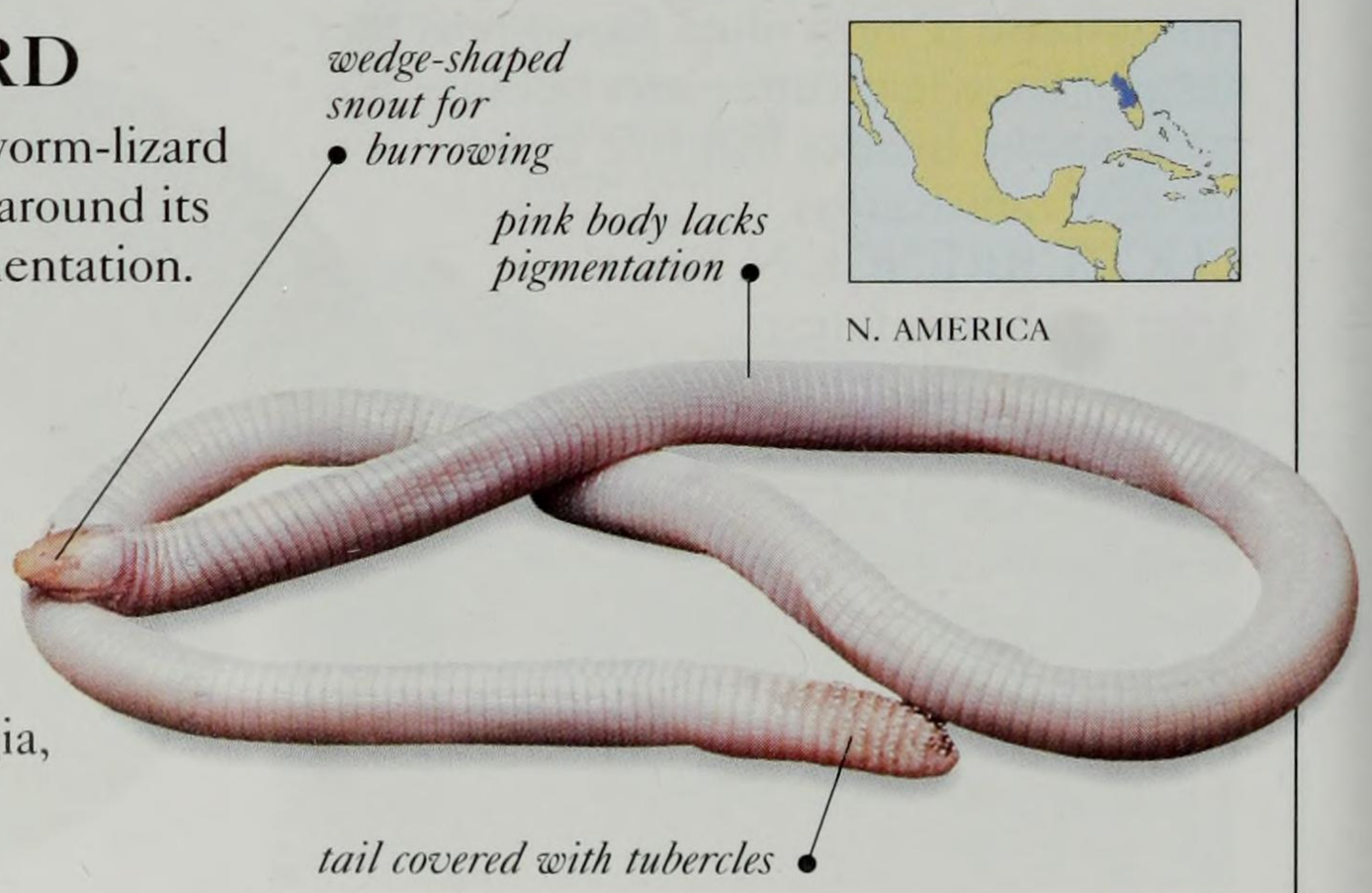
Length 4–12in (10–30cm)	Diet	Activity

Family RHINEURIDAE	Species *Rhineura floridana*	Status Locally common

FLORIDA WORM-LIZARD

Like all other amphisbaenians, this pink worm-lizard has numerous rings of small, square scales around its body but, unusually, it lacks any dark pigmentation. The armored head has a flat upper surface that ends in a wedge-shaped beak to aid in burrowing. The eyes are reduced to pigmented areas under the scales, and ears are absent. Florida Worm-lizards are most likely to be encountered when unearthed during digging.

- **OCCURRENCE** Florida and S. Georgia, US. On dry, sandy scrub.
- **REPRODUCTION** Lays 1–3 eggs.



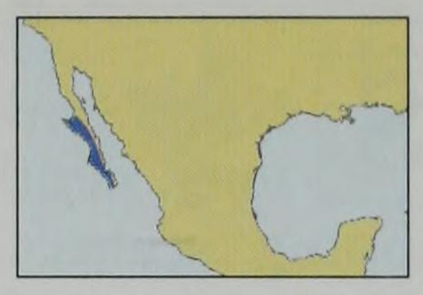
N. AMERICA

Length 10–14in (25–35cm)	Diet	Activity

Family BIPEDIDAE	Species *Bipes biporus*	Status Rare

AJOLOTE

The pink Ajolote, or Mole Lizard, is one of the most curious of all reptiles in appearance. Its body, like that of other amphisbaenians, is slender and wormlike, and encircled by numerous rings of tiny, square scales. However, whereas other amphisbaenians are completely legless (and many lizards have hindlimbs only), the Ajolote has a pair of forelimbs. These are well developed and each bears a foot with clawed toes. They are used, together with the blunt head, for burrowing, hence the name Mole Lizard. The Ajolote is found in burrows in damp, humus-rich sand. Above ground, it travels by a combination of caterpillar-like movements and dragging the body with the forelimbs.



N. AMERICA

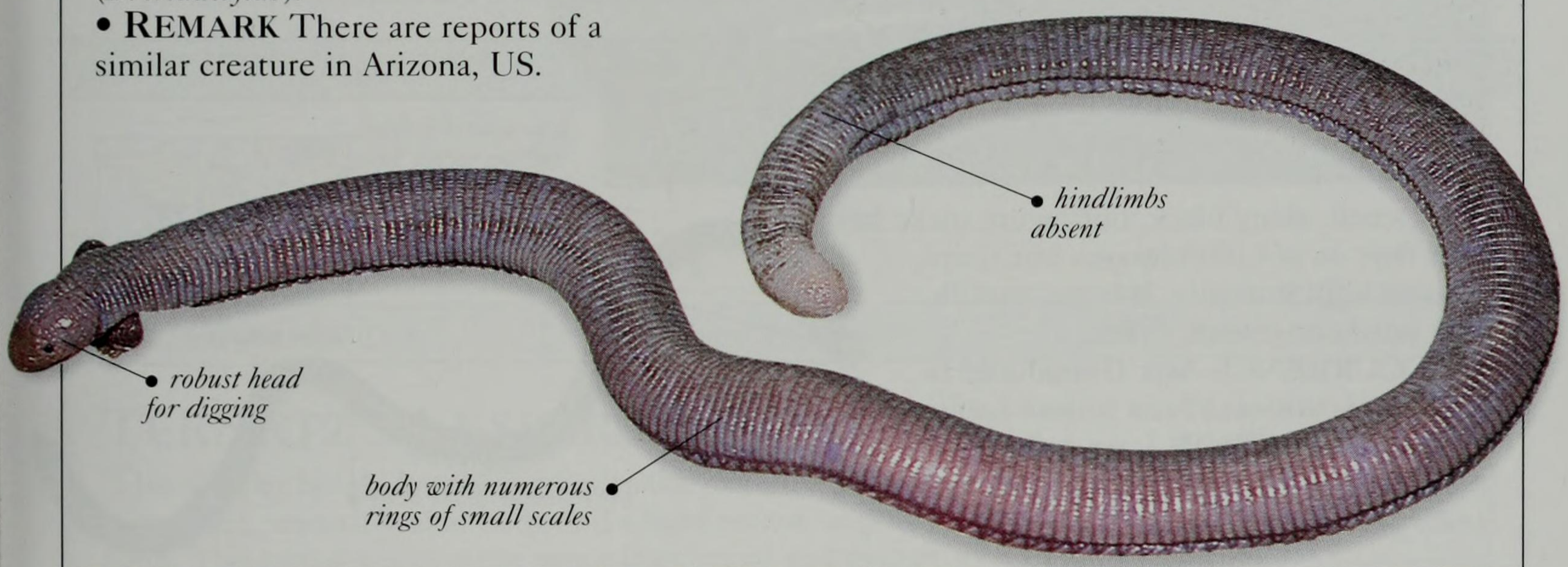


• **OCCURRENCE** Baja California, Mexico. In sandy, low-lying land.

• **REPRODUCTION** Lays 1–4 eggs.

• **SIMILAR SPECIES** Four-toed Mole Lizard (*Bipes canaliculatus*), Three-toed Mole Lizard (*B. tridactylus*).

• **REMARK** There are reports of a similar creature in Arizona, US.



Length 6¾–9½in (17–24cm)	Diet	Activity

Family TROGONOPHIDAE	Species *Trogonophis wiegmanni*	Status Locally common

CHECKERBOARD WORM-LIZARD

The black-and-yellow checkerboard pattern of this worm-lizard, its stout body, and its very short tail mean that it is unlikely to be confused with either of the two smaller amphisbaenians (*Blanus* species, opposite) within its range. It lives in the Atlas Mountains, at altitudes of up to 5,250ft (1,600m), but it is rarely seen unless dug from its deep burrow. Defenses against predators include thrashing around when grasped and rolling into a ball.



AFRICA



• **OCCURRENCE** N.W. Africa. In rocky, open country or woodland.

• **REPRODUCTION** Live-bearing, 2–5 neonates.

Length 8–10in (20–25cm)	Diet	Activity

SNAKES

SNAKES ARE characterized by a long, slender body covered in overlapping scales. They have no limbs (although some have vestigial claws and pelvic bones). The eyelids do not move but are fused to form transparent "spectacles," and there is no external ear. The bones of the jaws are not fused, enabling the snake to open its mouth wide, and the forked tongue is completely retractable. Only one lung is functional, the left lung usually being reduced or absent. Some primitive snakes have teeth only in one jaw; egg-eaters have no teeth at all.

There are about 2,800 species of snakes. Most are nonvenomous and do no harm to humans. Venomous snakes have specially adapted fangs through which venom is forcibly injected. In many, the fangs are at the rear of the upper jaw; of these, fewer than a dozen are dangerous. There are some 500 front-fanged venomous snakes, but many of these are also incapable of causing serious injury to humans.

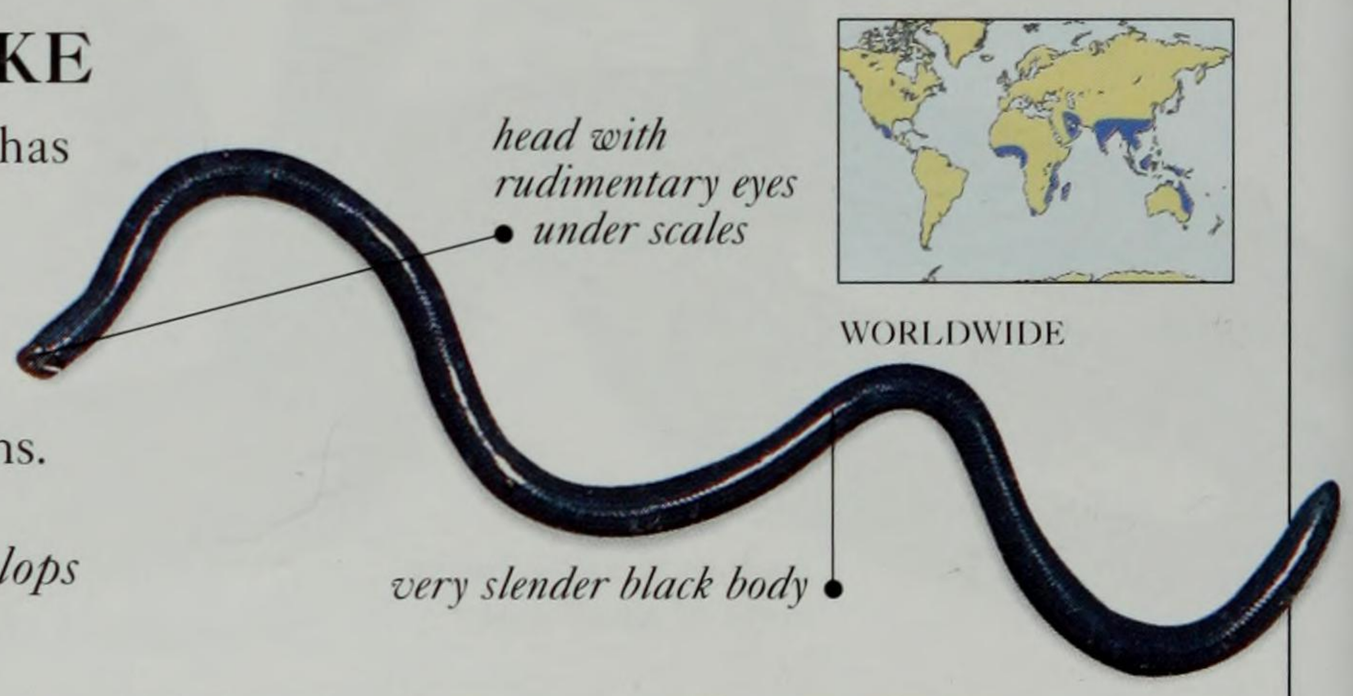
Snakes are dealt with here in 16 families. However, taxonomists may recognize other combinations. Some, for example, place boas and pythons in the same family (Boidae), but they have been treated separately here to emphasize the differences between them.

Family TYPHLOPIDAE	Species *Ramphotyphlops braminus*	Status Common

BRAHMINY BLINDSNAKE

This small, shiny black, burrowing snake has eyes that do not form images but simply register light intensity. It is the world's only parthenogenetic snake.

• **OCCURRENCE** Asia. (Introduced to many tropical areas.) Near human habitations.
• **REPRODUCTION** Lays 1–7 eggs.
• **SIMILAR SPECIES** Small *Ramphotyphlops* and *Typhlops* species.



WORLDWIDE

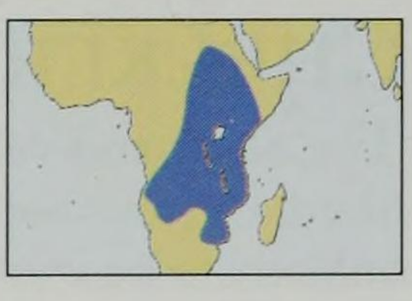
Length 6–7in (15–18cm)	Diet	Activity

Family TYPHLOPIDAE	Species *Rhinotyphlops schlegeli*	Status Locally common

SCHLEGEL'S BEAKED BLINDSNAKE

The coloration of this species – the world's largest blindsnake – varies greatly. Individuals may be gray or brown, with or without black stripes, or yellow with brown blotches. The underside is usually lighter in color. To aid burrowing, the rostral scale on the snout protrudes into a beak shape.

• **OCCURRENCE** E. and S. Africa. In coastal bush and sandveld.
• **REPRODUCTION** Lays 12–60 eggs.


AFRICA

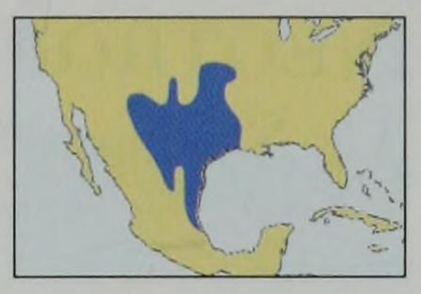


Length 24–37in (60–95cm)	Diet	Activity

Family LEPTOTYPHLOPIDAE	Species *Leptotyphlops dulcis*	Status Common

TEXAS BLINDSNAKE

This blindsnake may be brown, red, or pink above, with a silvery sheen, and lighter below. A spine in the tip of the tail helps the blindsnake to force itself down narrow burrows in search of termites and ant larvae. When in a nest of ferocious ants, this species coats itself in a pheremonal body secretion that deceives the ants into thinking that the snake is part of the nest, allowing the snake to enter the larval chambers to feed in safety.



N. AMERICA

- **OCCURRENCE** S.W. US and N.E. Mexico. In prairies, canyons, and deserts. In crevices, under stones, and in bushes.
- **REPRODUCTION** Lays 2–7 eggs.
- **SIMILAR SPECIES** Western Blindsnake (*Typhlops humilis*).



Length 6–10½in (15–27cm)	Diet	Activity

Family ANOMALEPIDIDAE	Species *Liotyphlops ternetzii*	Status Rare

TERNETZ'S LESSER BLINDSNAKE

This slender South American blindsnake has a dark, shiny, cylindrical, smooth-scaled body and a light yellow or pink head. The rostral scale on the snout is enlarged and projecting for excavating earth. The small mouth is set back beneath the head and there is only a single tooth in the lower jaw. Rudimentary eyes are concealed beneath the skin. Secretive and burrowing, Ternetz's Lesser Blindsnake lives mostly in the galleries of ants' nests, feeding on the eggs and larvae. A spine at the end of the tail helps it to move along inside the smooth-walled nests.



S. AMERICA

- **OCCURRENCE** C. South America. In rainforest.
- **REPRODUCTION** Lays eggs (clutch size unknown).
- **SIMILAR SPECIES** Beu's Lesser Blindsnake (*Liotyphlops beui*).



Length 6–8¼in (15–21cm)	Diet	Activity

Family LOXOCEMIDAE	Species *Loxocemus bicolor*	Status Locally common

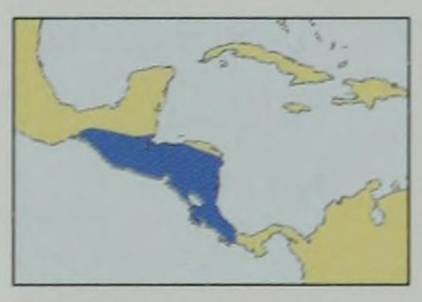
NEOTROPICAL SUNBEAM SNAKE

The Neotropical Sunbeam Snake is usually brown above, sometimes spotted with white, with either a uniform brown or white underside. Although it was originally known as the Mexican Burrowing Python, it is not a true python, despite having a pelvic girdle comprising two small bones similar to that of pythons and boas. This snake is semiburrowing, and its prey is believed to include the eggs and young of turtles and lizards, which are excavated with the pointed snout, as well as small mammals. Struggling prey is killed by constriction.

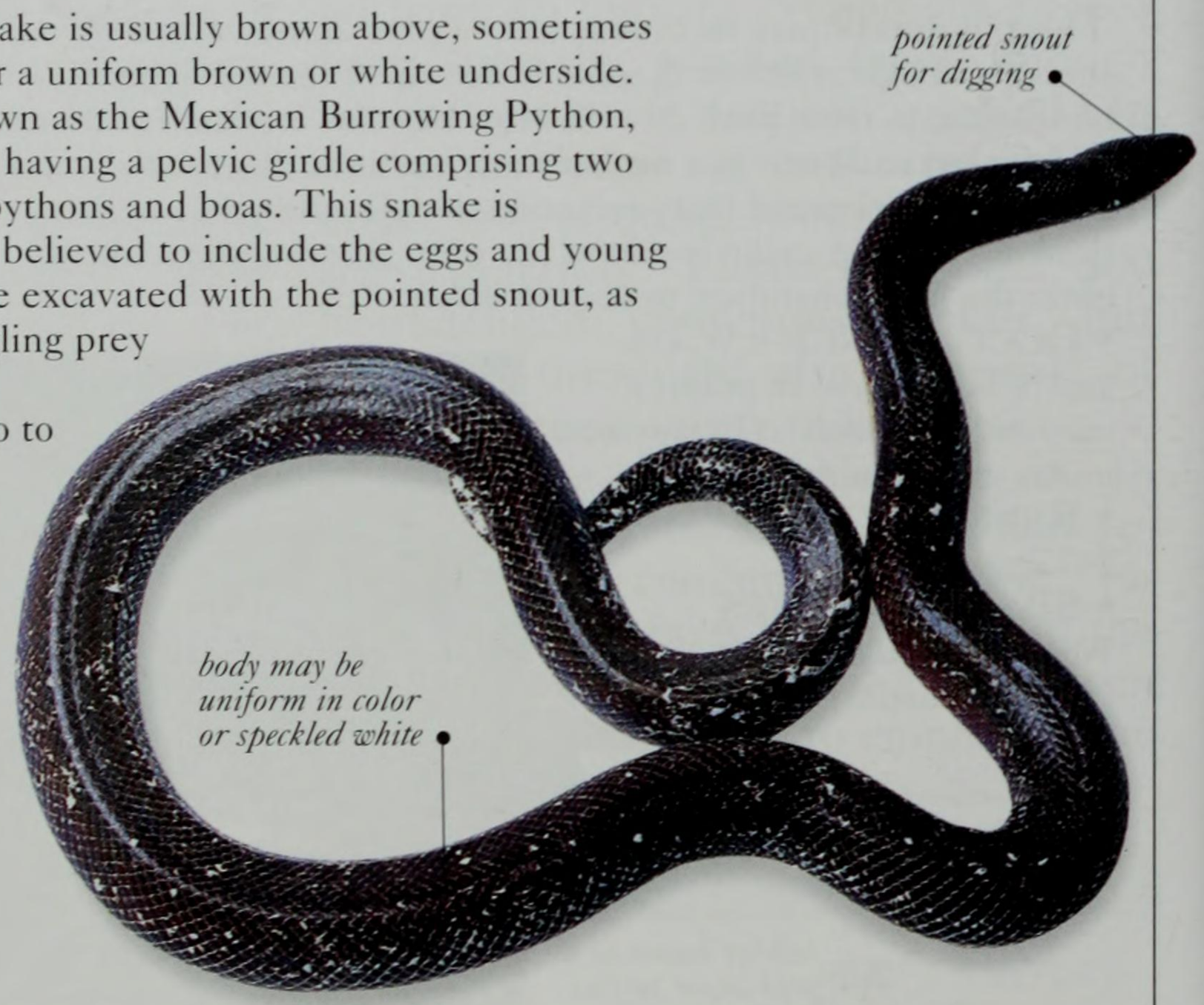
• **OCCURRENCE** W. Mexico to Costa Rica. In tropical forest.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Asian Sunbeam Snake (*Xenopeltis unicolor*, below).



N. & C. AMERICA



Length 3–4ft (1–1.3m)	Diet	Activity

Family XENOPELTIDAE	Species *Xenopeltis unicolor*	Status Locally common

ASIAN SUNBEAM SNAKE

The Asian Sunbeam Snake is brown above, with an iridescence in daylight, and white below. The head is flattened for burrowing into the wet mud and decaying vegetation in which it spends much of its time. Juveniles are similar to adults except they have a white band around the neck. This species is most commonly encountered on the surface after rain. It sometimes feeds on smaller snakes.

• **OCCURRENCE** S.E. Asia. In forested hills, rice paddies, marshes, and ditches.

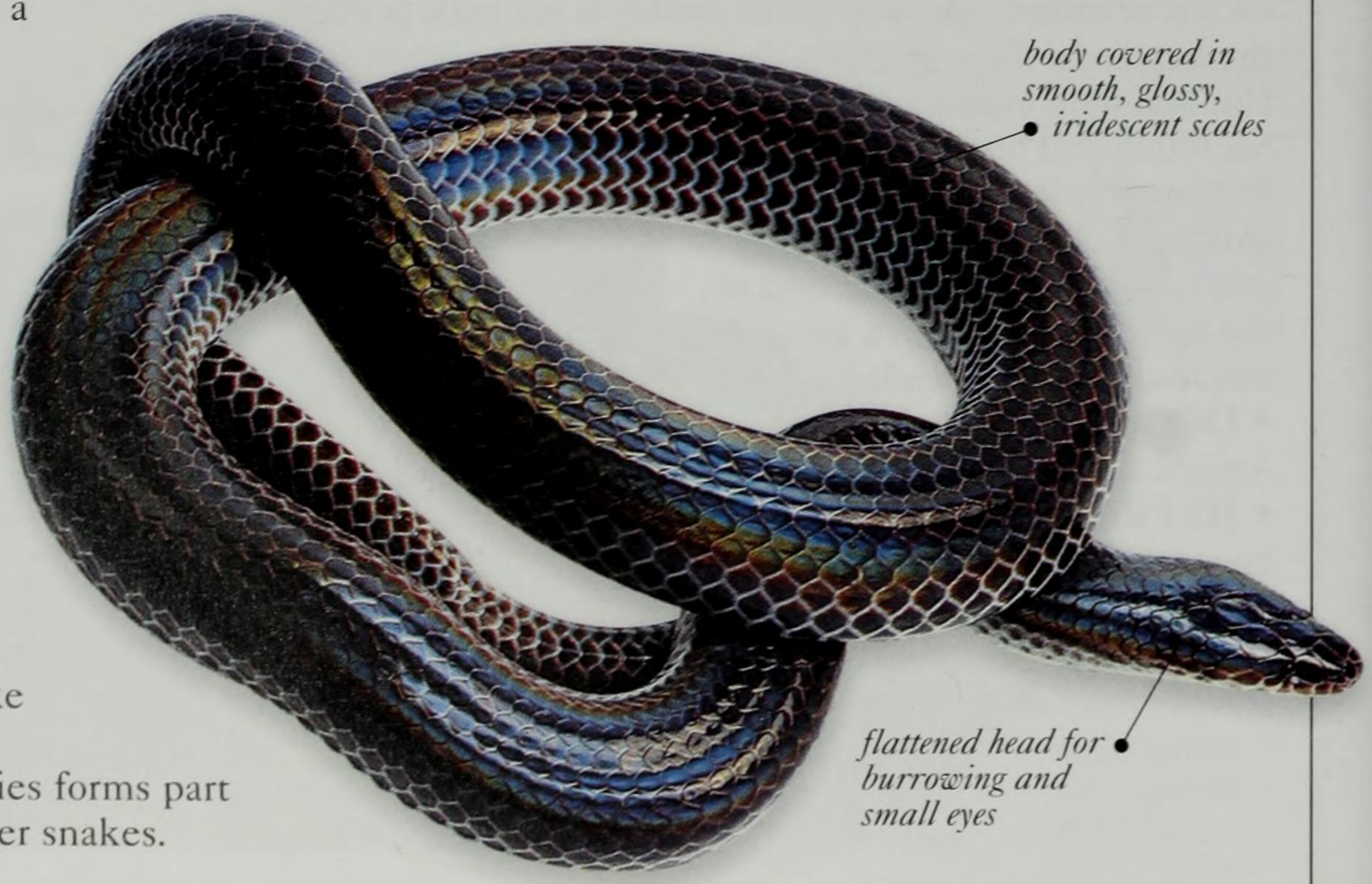
• **REPRODUCTION** Lays 6–17 eggs.

• **SIMILAR SPECIES** Chinese Sunbeam Snake (*Xenopeltis hainanensis*).

• **REMARK** This species forms part of the diet of many larger snakes.



ASIA



Length 3–4ft (1–1.3m)	Diet	Activity

Family ANILIIDAE	Species *Anilius scytale*	Status Locally common

SOUTH AMERICAN PIPESNAKE

The black-and-red banded South American Pipesnake is a semiaquatic and burrowing species with a large, transparent scale over each eye. Its prey includes other snakes, amphisbaenians, caecilians, and eels.

• **OCCURRENCE** Amazon Basin, South America. In rainforest.



S. AMERICA

• **REPRODUCTION** Live-bearing, 8–10 neonates.

• **SIMILAR SPECIES** Coralsnakes (*Micrurus* species, pp.163–64), false coralsnakes (*Erythrolamprus* species).



Length 28–35in (70–90cm)	Diet	Activity ☾

Family UROPELTIDAE	Species *Cylindrophis ruffus*	Status Common

RED-TAILED PIPESNAKE

The Red-tailed Pipesnake is dark purple to black above. Its underside is marked with white cross-bands, and the short, rounded tail is bright orange or red below. When threatened, this snake buries its head in the coils and raises its tail, possibly as a threat or to deflect attacks from the head. It burrows in mud or leaf-litter and eats other snakes, caecilians, and eels.

• **OCCURRENCE** S.E. Asia. In humid lowland areas.

• **REPRODUCTION** Live-bearing, 10–13 neonates.

• **SIMILAR SPECIES** Striped Asian Pipesnake (*Cylindrophis lineatus*).



ASIA



Length 2–3ft (0.7–1m)	Diet	Activity ☾

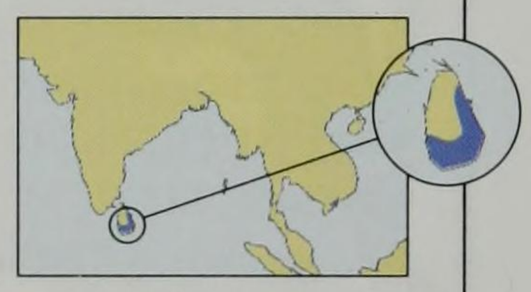
Family UROPELTIDAE	Species *Pseudotyphlops philippinus*	Status Locally common

LARGE SHIELDTAIL SNAKE

This brown-and-yellow burrowing species has a pointed head and a short, rough, flattened tail, which looks as if it has been truncated. The tail may be used to block the tunnel against predators or may aid in pushing the snake along underground. The Large Shieldtail Snake secretes a slimy fluid when molested. It lives under stones and in mud or humus, only moving to the surface in monsoon weather.

• **OCCURRENCE** Sri Lanka. In lowland agricultural fields.

• **REPRODUCTION** Live-bearing, 3–8 neonates.



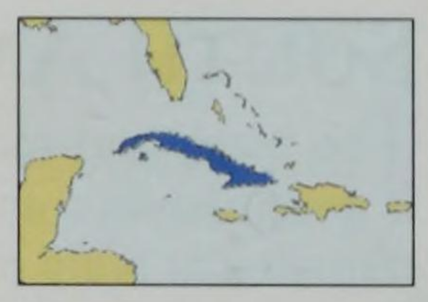
SRI LANKA



Length 17½–20in (45–50cm)	Diet	Activity ☾

Family TROPIDOPHEIDAE	Species *Tropidophis melanurus*	Status Common

CUBAN DWARF BOA



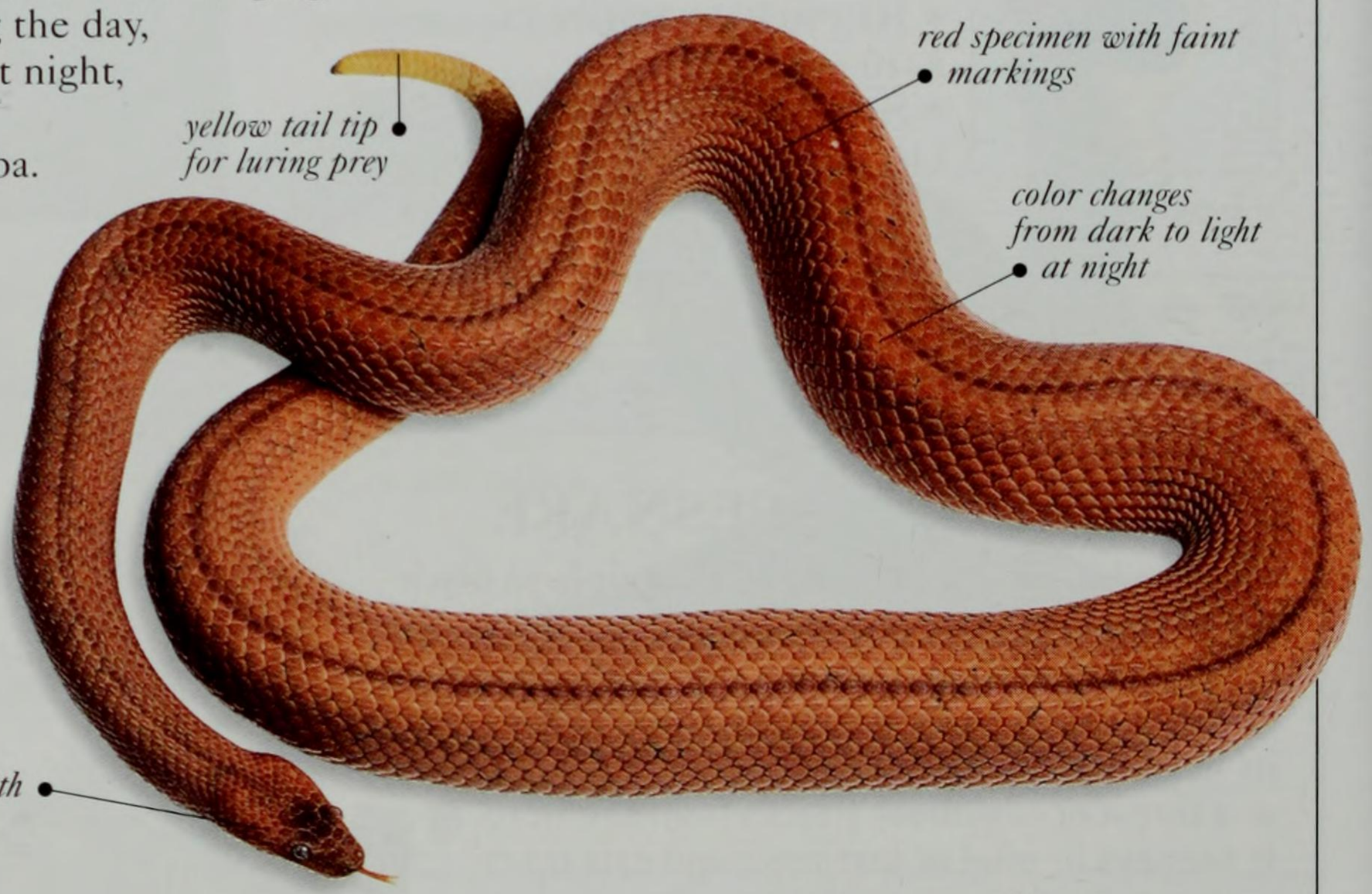
CUBA

The coloration of this species is gray, tan, or red, overlaid by darker stripes, zigzags, or blotches. This is the largest dwarf boa or woodsnake and, like its smaller relatives, it is an agile climber, equally at home in the treetops as under palm debris on the forest floor. Defensive behavior includes rolling into a ball; secreting a pungent white liquid from the cloaca; and changing color – from dark during the day, when inactive, to light at night, when active.

• **OCCURRENCE** Cuba. In rainforest, disturbed gardens, and rocky outcrops.

• **REPRODUCTION** Live-bearing, 4–9 neonates.

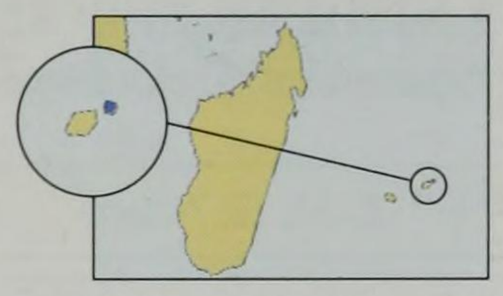
• **SIMILAR SPECIES** Haitian Dwarf Boa (*Tropidophis haetianus*).



Length 2½–3ft (0.8–1m)	Diet	Activity

Family BOLYERIIDAE	Species *Casarea dussumieri*	Status Endangered

ROUND ISLAND KEEL-SCALED BOA



ROUND ISLAND

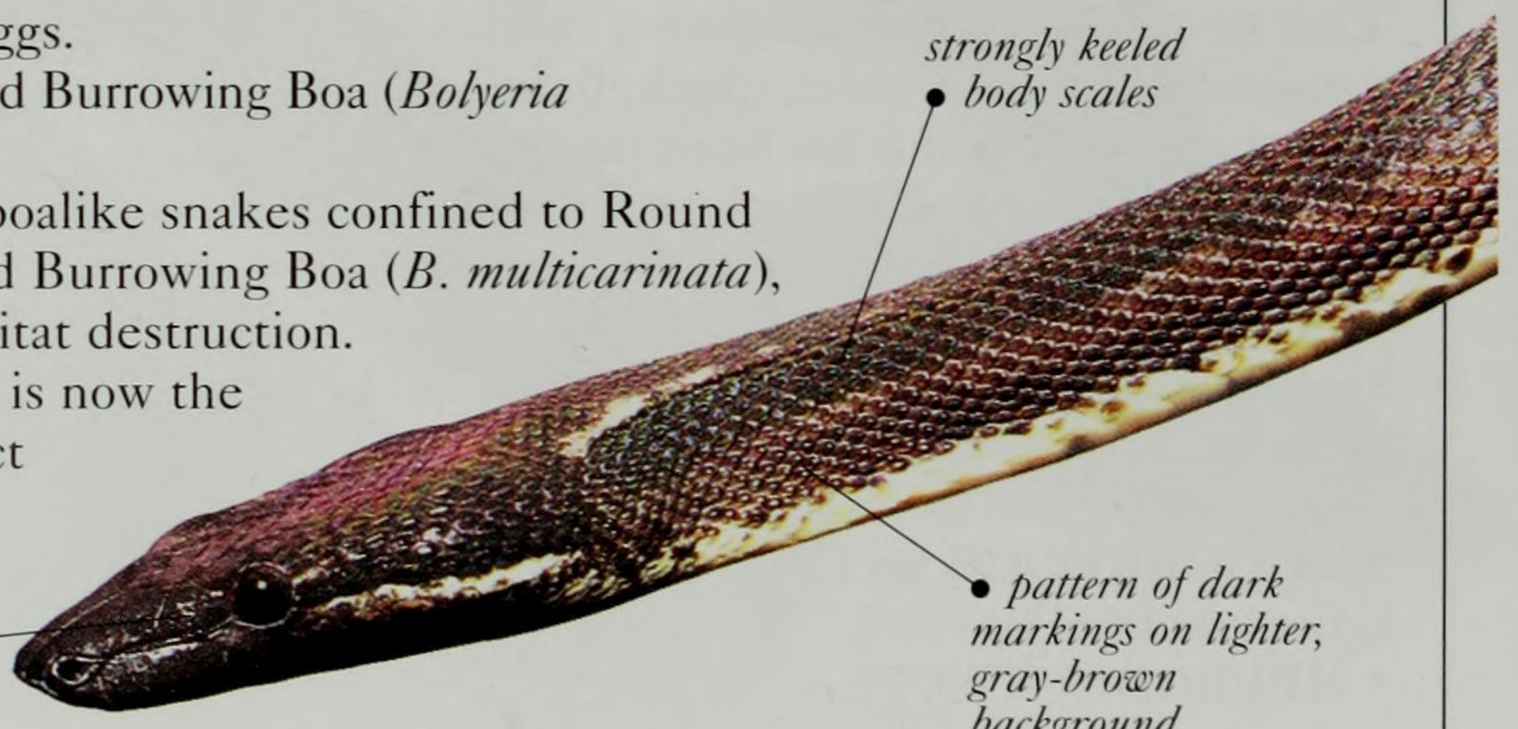
This slender, boalike snake is gray to brown with darker markings. Its head is relatively long and thin, with small eyes, and the body scales are strongly keeled. Unlike true boas, the Round Island Keel-scaled Boa lacks any vestiges of a pelvic girdle or hindlimbs, and it lays eggs rather than giving birth to live young.

• **OCCURRENCE** Round Island, Indian Ocean (N. of Mauritius). In rocky fissures filled with leaf-litter.

• **REPRODUCTION** Lays 3–10 eggs.

• **SIMILAR SPECIES** Round Island Burrowing Boa (*Bolyeria multicarinata*), last seen in 1975.

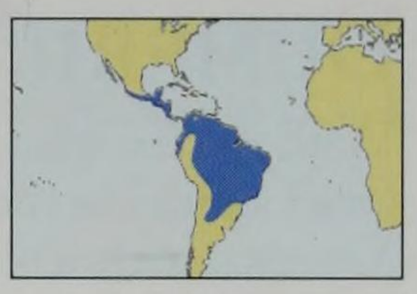
• **REMARK** This was one of two boalike snakes confined to Round Island. The other, the Round Island Burrowing Boa (*B. multicarinata*), is possibly extinct as a result of habitat destruction. The Round Island Keel-scaled Boa is now the subject of a captive-breeding project and a habitat recovery program.



Length 3–5ft (1–1.5m)	Diet	Activity

Family BOIDAE	Species *Boa constrictor*	Status Common

COMMON BOA CONSTRICTOR



C. & S. AMERICA

This is a widespread species with up to 10 mainland and island subspecies. These range from the dark-colored Argentinian Boa (*Boa constrictor occidentalis*) to much lighter, brown or gray specimens, often with a red tail. All, however, have saddle markings. There is also considerable variation in size: dwarf island races such as the Hog's Island Boa (*B. constrictor imperator*) reach only 3ft (1m) compared to the 13ft (4m) of mainland boas. Common Boas are powerful constrictors capable of subduing fairly large mammals, but they are not the huge giants some people believe them to be. They are not dangerous to humans although they can deliver painful bites, especially dark Central American species such as the Imperial Boa (*B. constrictor imperator*). Common Boas are mainly terrestrial but they can climb and swim well.

• **OCCURRENCE** Central and South America, and Lesser Antilles. In arid woodland to rainforest, and around human habitations.

• **REPRODUCTION** Live-bearing, 15–50 neonates.

• **SIMILAR SPECIES** Terciopelo (*Bothrops asper*, p.180).

body pattern of dark brown saddles on lighter background

tail often with same coloration as body, but may be red, especially in juveniles

dark stripe behind each eye

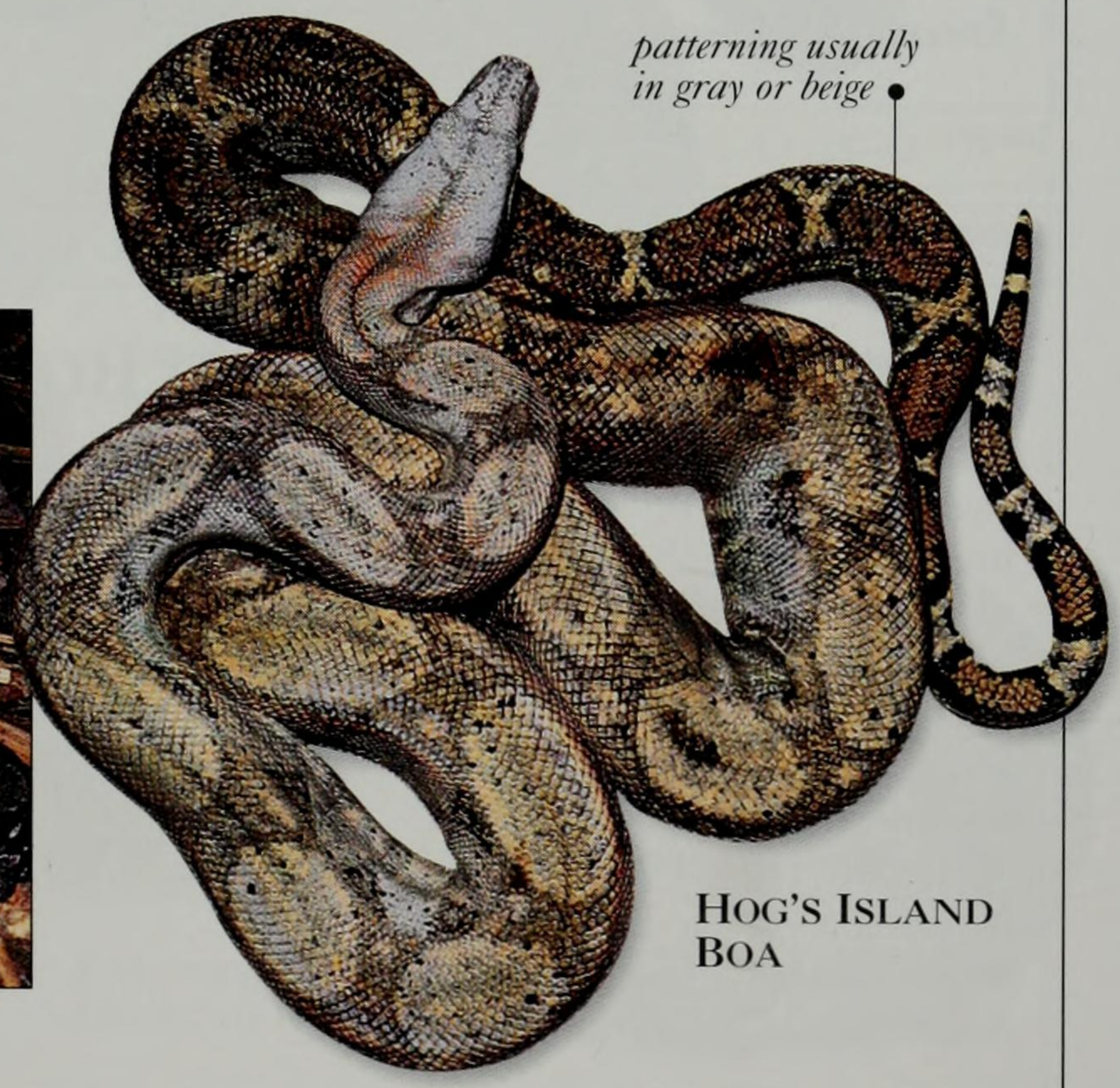
COLOMBIAN BOA

very dark body with lighter spots



ARGENTINIAN BOA (JUVENILE)

patterning usually in gray or beige



HOG'S ISLAND BOA

Length 6½–13ft (2–4m)	Diet	Activity ☾◑

Family BOIDAE	Species *Boa dumerili*	Status Rare

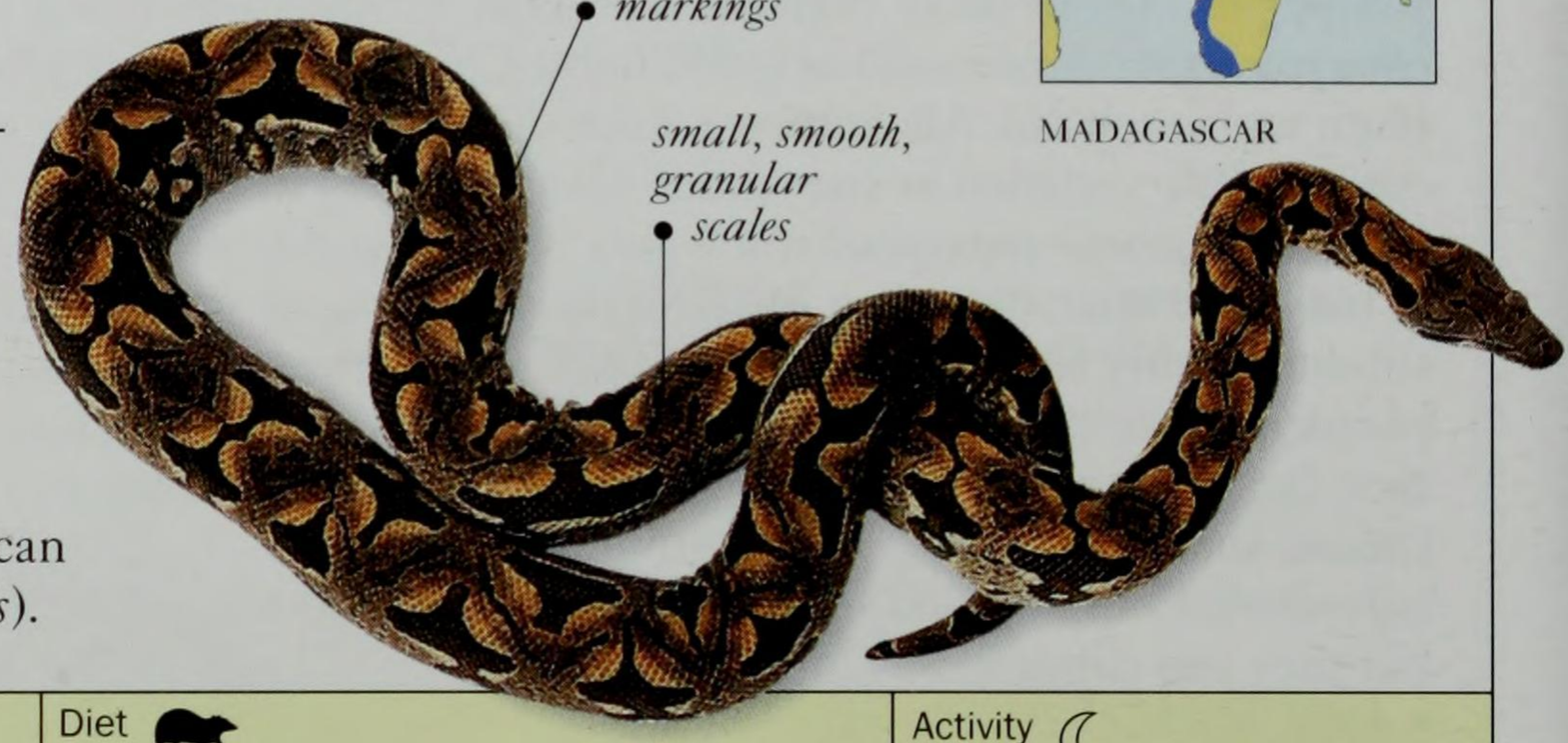
DUMERIL'S GROUND BOA

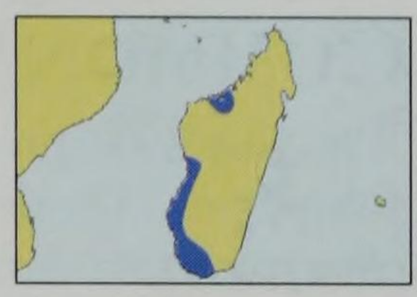
With its two-tone brown saddle markings, this species looks similar to the boas of South America, with which it may share a common ancestor. It takes warm-blooded prey even though it lacks heat-sensitive labial pits.

• **OCCURRENCE** Madagascar. In dry forest.

• **REPRODUCTION** Live-bearing, 2–21 neonates.

• **SIMILAR SPECIES** Madagascan Ground Boa (*Boa madagascariensis*).





MADAGASCAR

Length 5–6½ft (1.5–2m)	Diet	Activity

Family BOIDAE	Species *Boa manditra*	Status Common

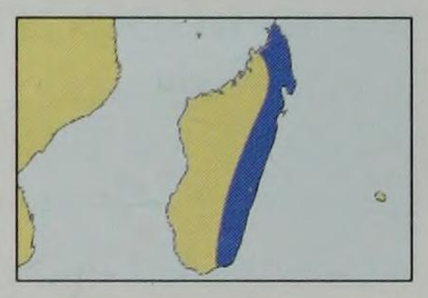
MADAGASCAN TREE BOA

The coloring of this slender-bodied boa ranges from greenish to brown or red, depending on geographical location. Both arboreal and terrestrial, it is a powerful constrictor that hunts warm-blooded prey using its heat-sensitive labial pits.

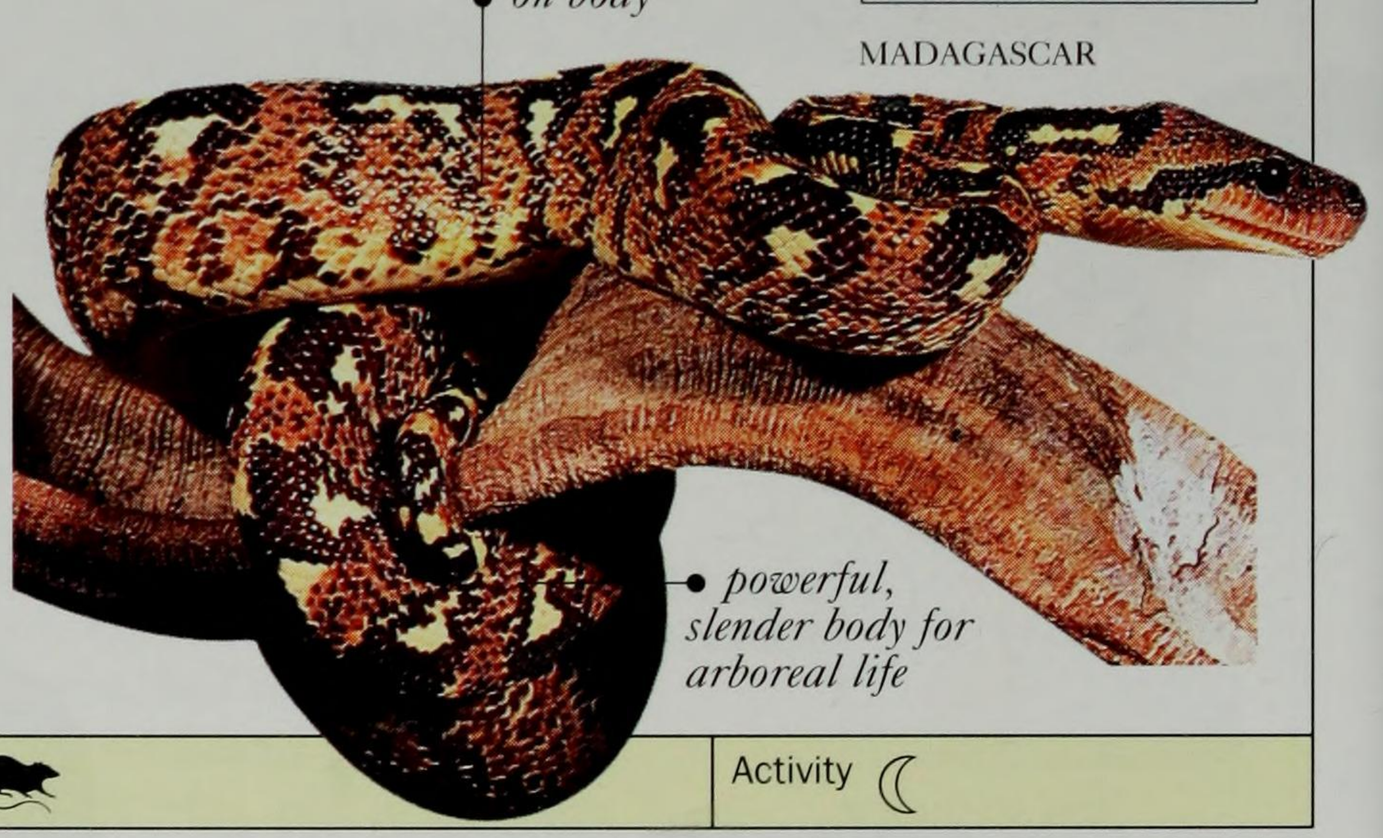
• **OCCURRENCE** Madagascar. In dry, semidesert forest, rainforest, and farmland.

• **REPRODUCTION** Live-bearing, 3–16 neonates.

• **REMARK** This species was formerly known as *Sanzinia madagascariensis*.



MADAGASCAR



Length 6½–8ft (2–2.5m)	Diet	Activity

Family BOIDAE	Species *Candoia aspera*	Status Locally common

NEW GUINEA GROUND BOA

This is a stout, short-tailed, two-tone brown snake. Often found in piles of coconut husks, its usual defense is to hide its head in its coils, but it may bite if molested.

• **OCCURRENCE** New Guinea and nearby islands. In rainforest and on plantations.

• **REPRODUCTION** Live-bearing, 5–48 neonates.

• **SIMILAR SPECIES** Northern Death Adder (*Acanthophis praelongus*, p.156).



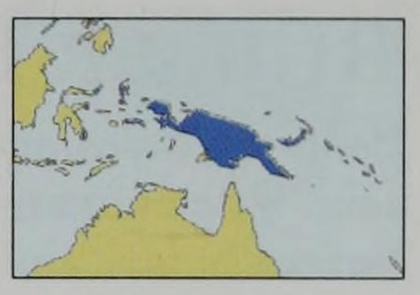
NEW GUINEA



Length 2–3ft (0.6–1m)	Diet	Activity

Family BOIDAE	Species *Candoia carinata*	Status Locally common

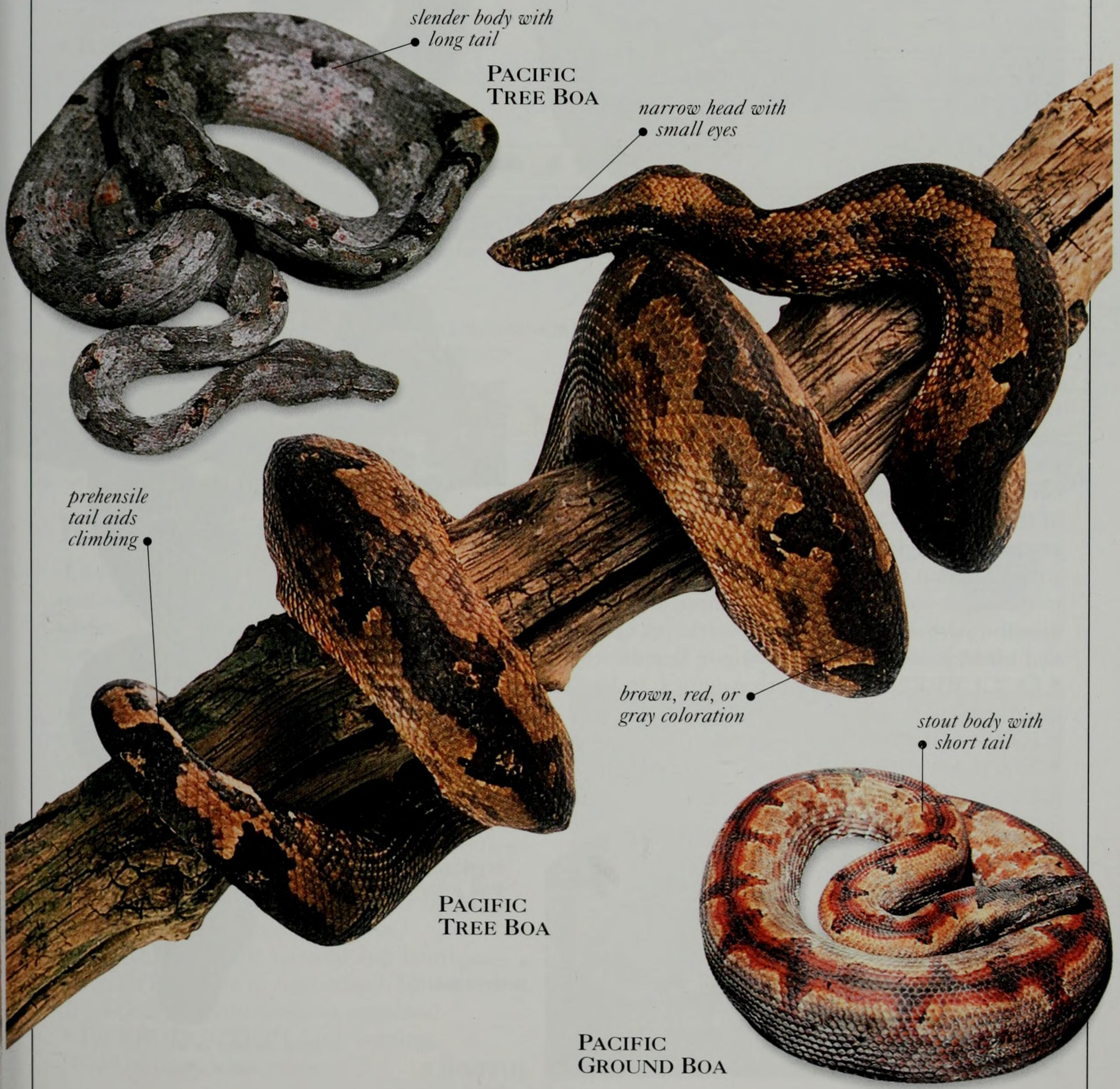
PACIFIC BOA



ASIA, OCEANIA

This species is extremely variable. Some populations are terrestrial, while others are arboreal. The Pacific Ground Boa (*Candoia carinata paulsoni*) is short-tailed, stout-bodied, and may be red or grayish brown to off-white. It is terrestrial and occurs in areas where the New Guinea Ground Boa (*C. aspera*, opposite) is absent. The Pacific Tree Boa (*C. carinata carinata*) is a slender-bodied, long-tailed, arboreal snake that occurs in the same areas as the New Guinea Ground Boa. It may be brown or gray, and has an off-white patch above the cloaca.

- **OCCURRENCE** New Guinea, E. Indonesia, and the Solomon Islands. In rainforest and on cocoa and coconut plantations.
- **REPRODUCTION** Live-bearing, 4–50 neonates.
- **SIMILAR SPECIES** New Guinea Ground Boa (*C. aspera*, opposite).



Length 2–3ft (0.7–1m)	Diet	Activity

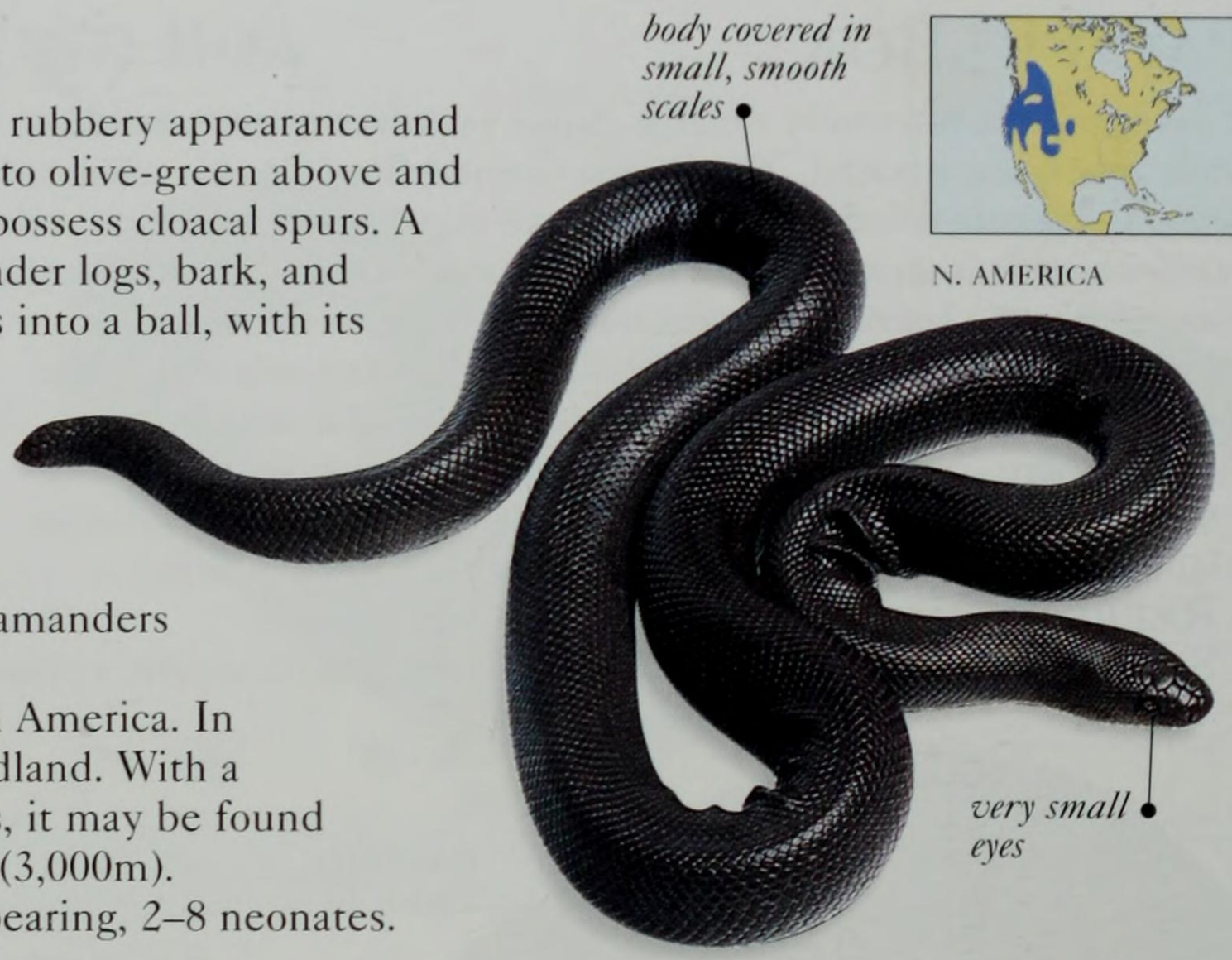
Family BOIDAE	Species *Charina bottae*	Status Locally common

RUBBER BOA

Smooth scales give this boa a rubbery appearance and feel. The coloration is brown to olive-green above and yellow below, and the males possess cloacal spurs. A secretive snake, it burrows under logs, bark, and rocks. When disturbed it coils into a ball, with its head protected inside, and extends its blunt, head-shaped tail as a decoy. This species burrows, climbs, and swims well, and includes other snakes and salamanders in its varied diet.

• **OCCURRENCE** W. North America. In grassland, chaparral, and woodland. With a preference for cool conditions, it may be found at altitudes as high as 9,850ft (3,000m).

• **REPRODUCTION** Live-bearing, 2–8 neonates.





N. AMERICA

Length 14–31in (35–80cm)	Diet	Activity ☾

Family BOIDAE	Species *Corallus caninus*	Status Locally common

EMERALD TREE BOA

An agile climber, the Emerald Tree Boa has a slender, compressed body and a long prehensile tail. It has striking coloration – bright green with white markings along the center of the back, yellow lower sides and lip scales, and a white underside. The scales of the long, slender snout contain heat-sensitive labial pits. The front teeth of the upper jaw are particularly long. Individual young in a single litter may be green, red, yellow, or a combination of these. They undergo a color change to the adult coloration between three and twelve months. Although adults are constrictors of mammals and birds, juveniles may prey upon lizards.

• **OCCURRENCE** N. South America. In lowland rainforest.

• **REPRODUCTION** Live-bearing, 7–14 neonates.

• **SIMILAR SPECIES** Emerald Pitviper (*Bothrops bilineatus*), Green Tree Python (*Morelia viridis*, p.121).



ADULT



JUVENILE



S. AMERICA

Length 5–6½ft (1.5–2m)	Diet	Activity ☾◑

Family BOIDAE	Species *Corallus hortulanus*	Status Common

AMAZONIAN TREE BOA

The Amazonian Tree Boa is a very slender, almost entirely arboreal snake with a prehensile tail. Its coloration is highly variable – it may be yellow, red, orange, gray, or reticulated black and gray. Like the Emerald Tree Boa (opposite), the Amazonian Tree Boa has heat-sensitive labial pits, vertical pupils, and long teeth in its front outer jaw. The back of the head is angular, allowing the jaws to open very wide.

• **OCCURRENCE** N. South America. In forest margins and in vegetation over water.

• **REPRODUCTION** Live-bearing, 2–12 neonates.

• **SIMILAR SPECIES** Caribbean and Venezuelan tree boas (*Corallus cooki*, *C. grenadensis*, *C. ruschenbergerii*).

• **REMARK** This is the most frequently encountered nocturnal snake in riverine forest habitats in the Amazon Basin.



S. AMERICA



ORANGE SPECIMEN



BLACK-AND-GRAY SPECIMEN

Length 5–6½ft (1.5–2m)	Diet	Activity

Family BOIDAE	Species *Epicrates cenchria*	Status Locally common

RAINBOW BOA

The Rainbow Boa is a powerful constrictor, so named because of the iridescent sheen of its scales. Throughout its range, this boa exhibits considerable variation in body patterning. Specimens from Panama and Colombia are uniform brown, while those from Argentina are gray-brown on the sides and dark brown on the back, with lighter brown oval markings. The most striking Rainbow Boas are the orange, red, and black ones from Brazil (shown here). Most of the nine subspecies have five dark longitudinal stripes on the head, the outer stripes passing through the eye. All possess heat-sensitive labial pits.

• **OCCURRENCE** Central and South America (Panama to Argentina). In rainforest, dry woodland, and savanna grassland.

• **REPRODUCTION** Live-bearing, 10–30 neonates.



C. & S. AMERICA



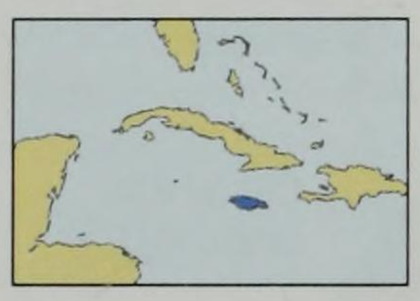
Length 5–6½ft (1.5–2m)	Diet	Activity

Family BOIDAE	Species *Epicrates subflavus*	Status Endangered

JAMAICAN BOA

The background color of this slender boa is red-brown, tan, or yellow, becoming darker toward the tail. Scattered black scales may form irregular cross-bands on the body. This boa survives only in a few isolated sites.

• **OCCURRENCE** Jamaica. In rocky habitats, caves, and woodland.



JAMAICA

• **REPRODUCTION** Live-bearing, 5–7 neonates.

• **SIMILAR SPECIES** Puerto Rican Boa (*Epicrates inornatus*).

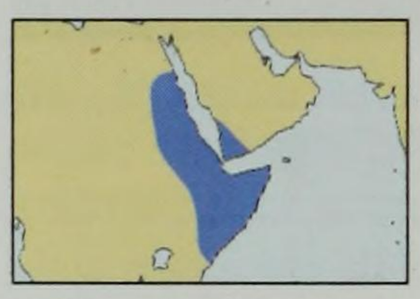


Length 6½–8ft (2–2.5m)	Diet	Activity

Family BOIDAE	Species *Gongylophis colubrinus*	Status Locally common

EAST AFRICAN SAND BOA

Sand boas have stout bodies and short tails. The head is wedge-shaped, and the rostral scale is enlarged. The scales at the rear of the body and on the tail are highly keeled. Of the two subspecies, the Kenyan Sand Boa (*Gongylophis colubrinus loveridgei*, shown here) is the best known.

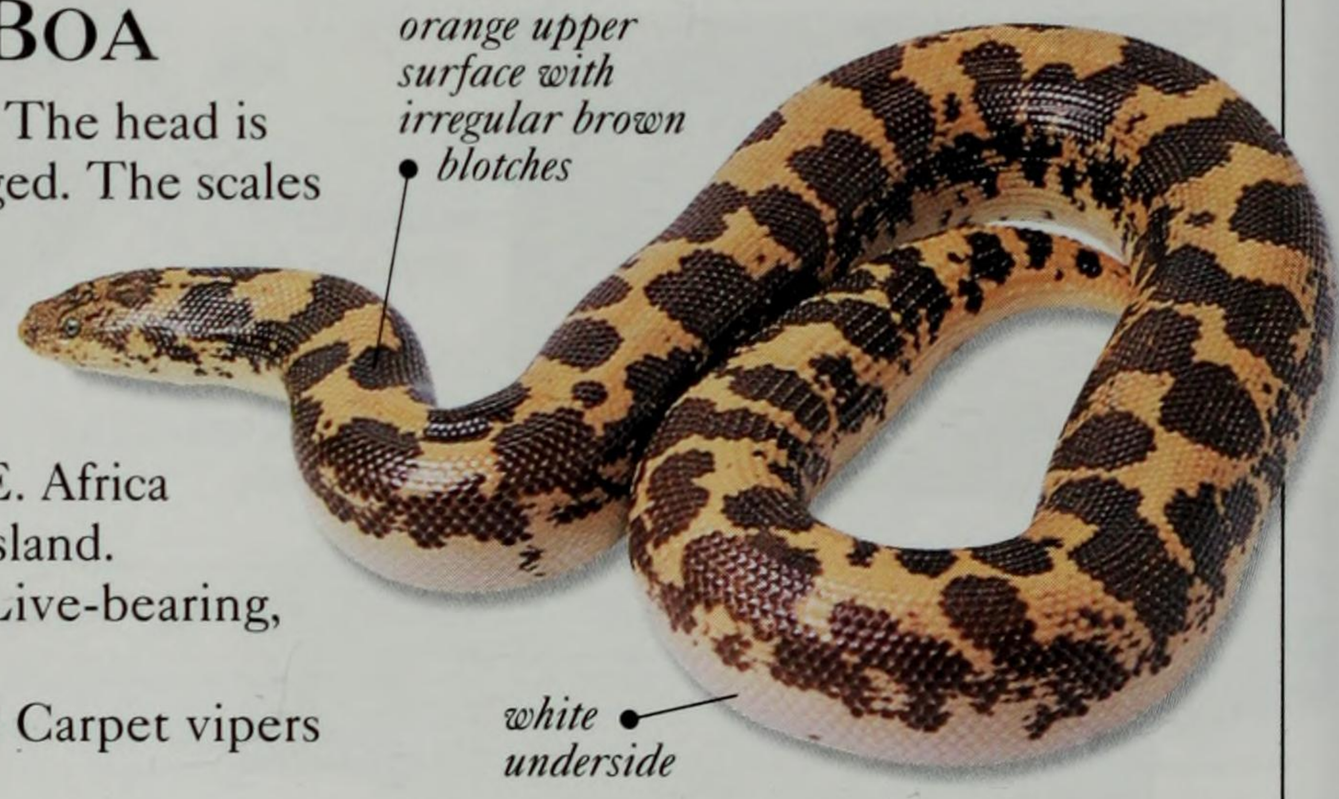


AFRICA, MIDDLE EAST

• **OCCURRENCE** N.E. Africa and Yemen. In arid grassland.

• **REPRODUCTION** Live-bearing, 3–21 neonates.

• **SIMILAR SPECIES** Carpet vipers (*Echis* species, p.186).



Length 20–35in (50–90cm)	Diet	Activity

Family BOIDAE	Species *Gongylophis conicus*	Status Locally common

ROUGH-SCALED SAND BOA

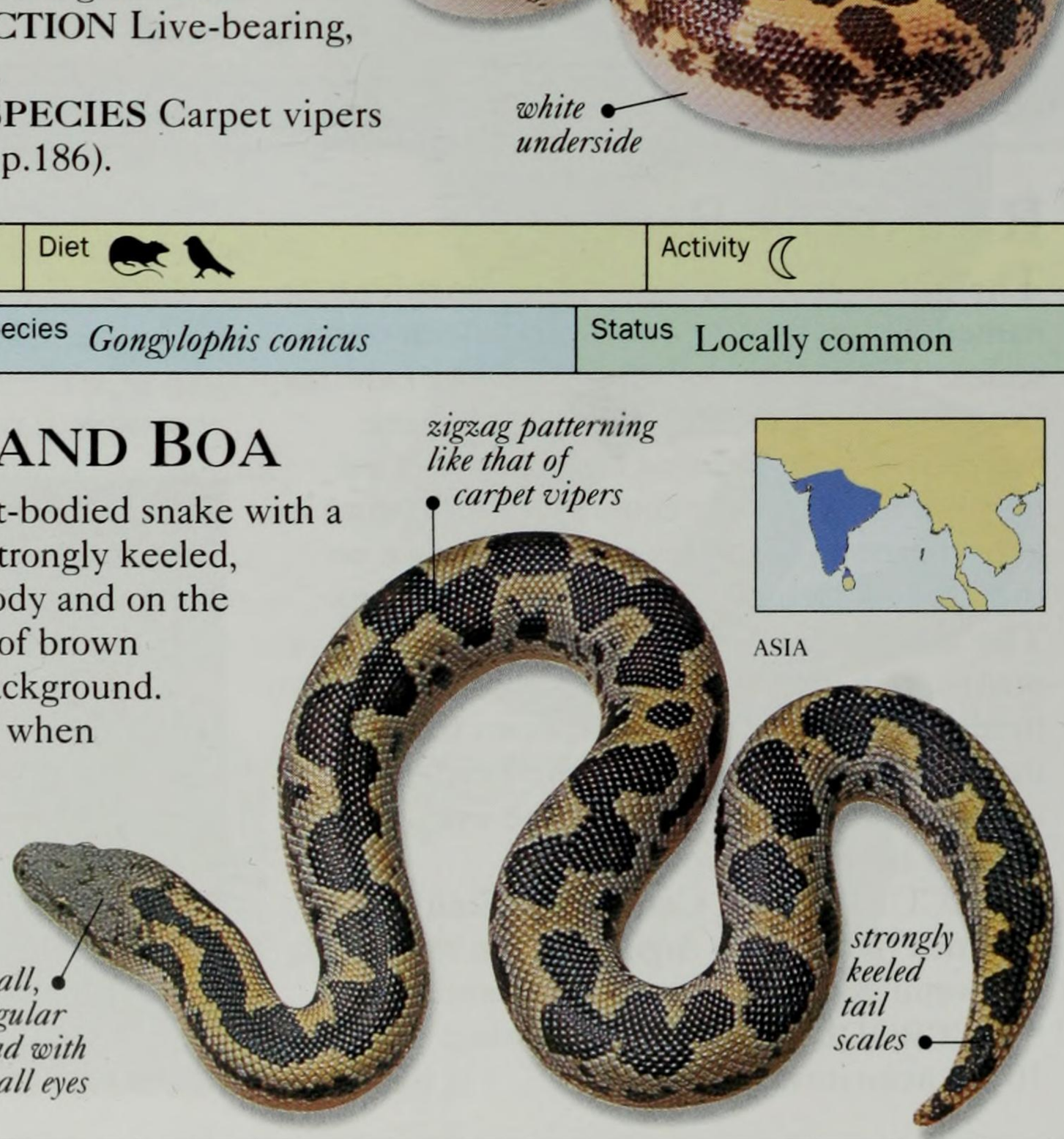
Like most sand boas, this is a stout-bodied snake with a short, pointed tail. The scales are strongly keeled, especially on the rear part of the body and on the tail. Patterning consists of a zigzag of brown blotches and saddles on a cream background. Sand boas will coil into a loose ball when attacked; their bite can be painful.

• **OCCURRENCE** Pakistan to Sri Lanka. In sandy habitats.

• **REPRODUCTION** Live-bearing, 5–8 neonates.

• **SIMILAR SPECIES** Carpet vipers (*Echis* species, p.186).

ASIA



Length 1½–3ft (0.5–1m)	Diet	Activity

Family BOIDAE	Species *Eunectes murinus*	Status Common

GREEN ANACONDA

The green-and-black spotted coloration of the Green Anaconda makes recognition easy. The snake often grows to an immense weight and huge girth, yet moves relatively easily through the water in which it spends much of its life. Hunting by ambush from the shallows, anacondas can kill large prey, including capybara, deer, young jaguars, and even caimans. They are sufficiently powerful constrictors to kill humans, and have been known to eat them occasionally. Anacondas court and mate in the water and may form mating balls comprising several smaller males and one large female. Females also give birth in the water.



S. AMERICA

• **OCCURRENCE** N. South America. In rainforest rivers, lagoons, and seasonally flooded grassland.

• **REPRODUCTION** Live-bearing, 4–80 neonates.

• **REMARK** This is the world's largest and heaviest snake, although the Reticulated Python (*Python reticulatus*, p.123) may grow longer.

forked tongue

powerfully muscular body for constriction

numerous rows of small, smooth scales

from above, black-edged, orange-yellow stripes behind eyes resemble horns when head submerged

unique body pattern of black ocelli on green background

Length 20–33ft (6–10m)	Diet	Activity

Family BOIDAE	Species *Eunectes notaeus*	Status Common

YELLOW ANACONDA

Also known as the Paraguayan Anaconda, this powerful constrictor is yellow with longitudinal rows of black spots on the body and a black, three-pronged arrow on top of the head. Smaller than the related Green Anaconda (*Eunectes murinus*, p.115), it also inhabits a more restricted range. The Yellow Anaconda is capable of killing capybara, large wading birds, and Yacare Caimans by constriction, but is not large enough to devour humans.

• **OCCURRENCE** S.W. Brazil, Paraguay, Bolivia, and N. Argentina. In grassland and watercourses.

• **REPRODUCTION** Live-bearing, 4–20 neonates.

• **SIMILAR SPECIES** De Schauensee's Anaconda (*E. deschauenseei*).

• **REMARK** There is a recent report of the Yellow Anaconda hybridizing with the Green Anaconda in Bolivia.



S. AMERICA



Length 6½–10ft (2–3m)	Diet	Activity

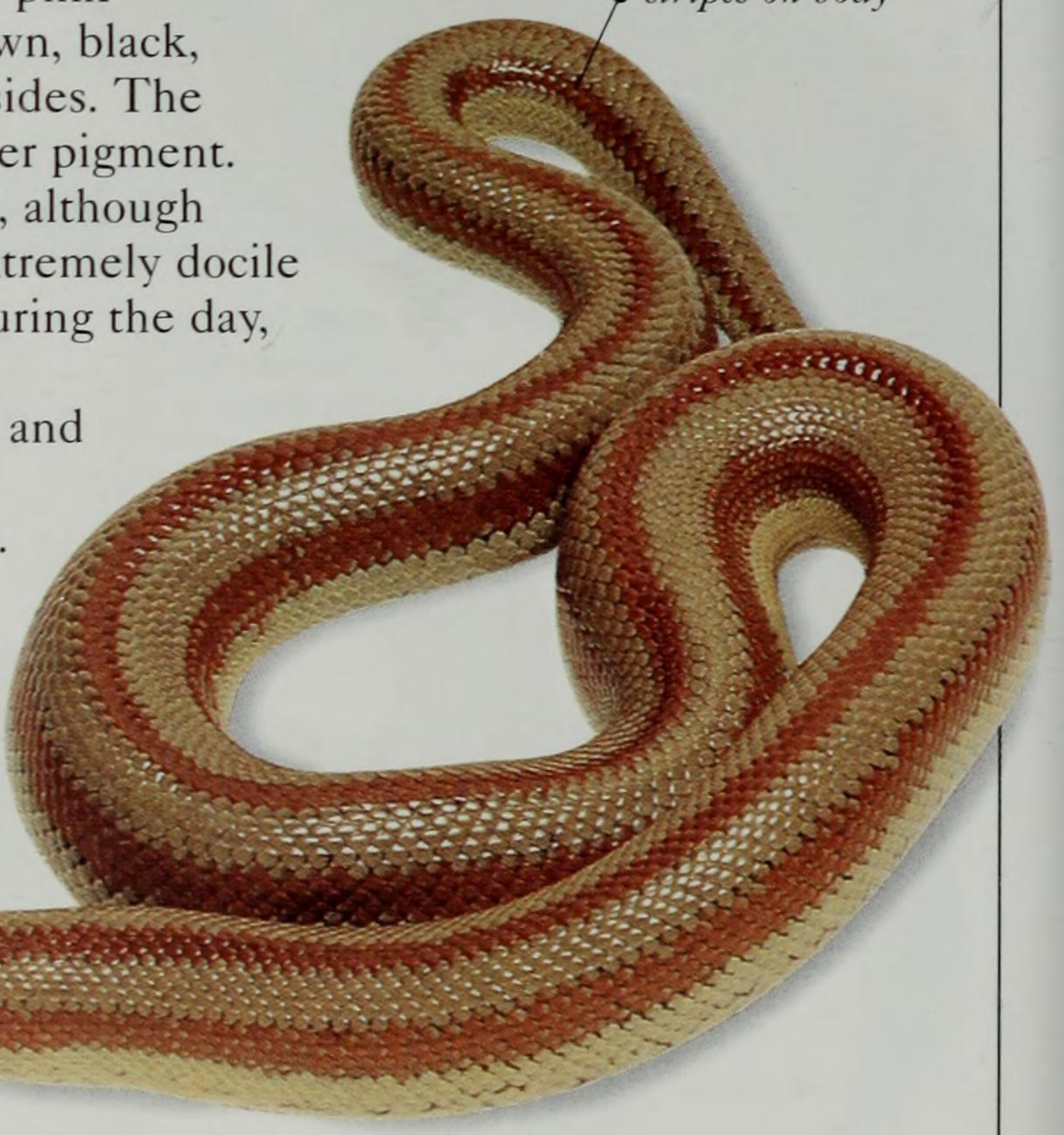
Family BOIDAE	Species *Lichanura trivirgata*	Status Locally common

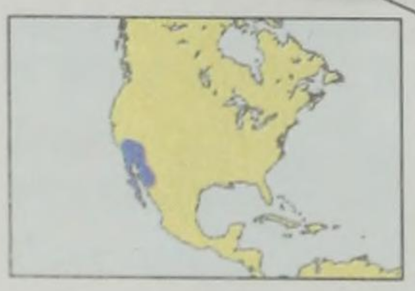
ROSY BOA

This small but powerful constrictor may be gray or pink in color, and usually has a series of three broad brown, black, or reddish longitudinal stripes down the back and sides. The underside is usually white, often spotted with darker pigment. Both males and females possess small cloacal spurs, although only the males actually use them. Rosy Boas are extremely docile snakes and rarely bite. They shelter under rocks during the day, and they may hibernate in groups in cold weather.

• **OCCURRENCE** S.W. North America. In desert and rocky scrubland (often in seasonal watercourses) at altitudes ranging from sea level to 4,000ft (1,200m).

• **REPRODUCTION** Live-bearing, 1–12 neonates.





N. AMERICA

Length 2–3½ft (0.6–1.1m)	Diet	Activity

Family PYTHONIDAE	Species *Antaresia childreni*	Status Common

CHILDREN'S PYTHON



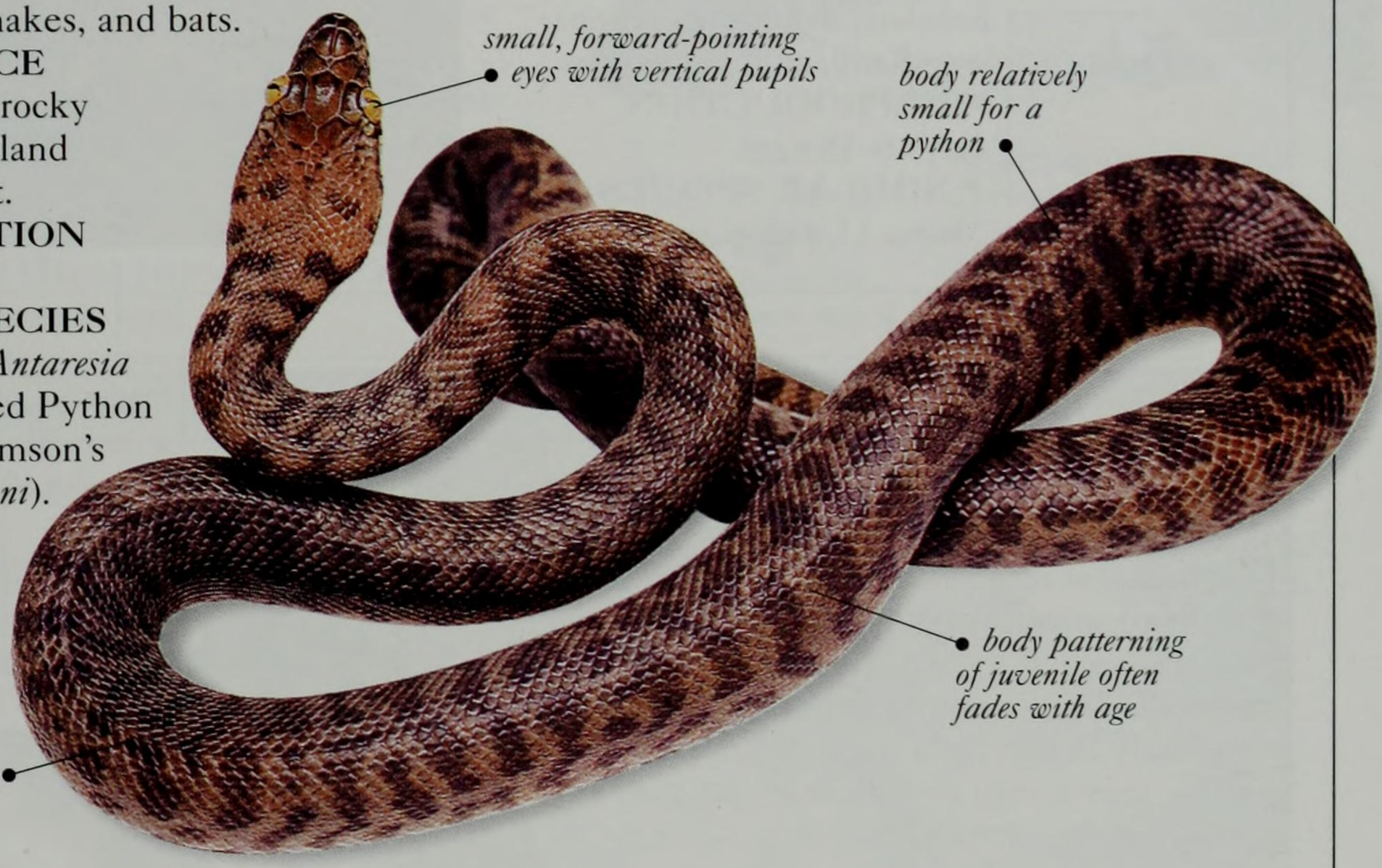
AUSTRALIA

This very small python, named after the zoologist J.G. Children, is also known as the Northern Brown Python. It is often uniform brown as an adult, although the juvenile (shown here) is more marked, with dark bars and spots crossing the head and body. These darker markings fade with age. Prey consists mainly of skinks and geckos, but this python also eats frogs, snakes, and bats.

• **OCCURRENCE**
N. Australia. On rocky hillsides, in grassland and coastal forest.

• **REPRODUCTION**
Lays 7–20 eggs.

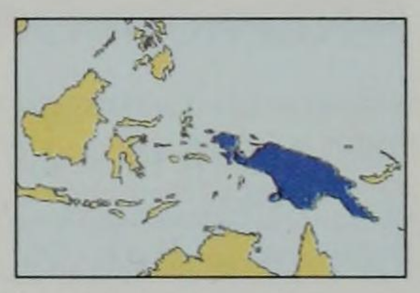
• **SIMILAR SPECIES**
Pygmy Python (*Antaresia perthensis*), Spotted Python (*A. maculosa*), Stimson's Python (*A. stimsoni*).



Length 2½–3ft (0.8–1m)	Diet	Activity ☾

Family PYTHONIDAE	Species *Apodora papuana*	Status Locally common

PAPUAN OLIVE PYTHON



ASIA, AUSTRALASIA

The Papuan Olive Python has a distinctive two-tone, green-brown body coloration. The contrasting head is light gray-brown with black interstitial skin, and heat-sensitive pits are present on the lips. A large and powerful constrictor, the Papuan Olive Python is easily capable of killing large animals (one of these pythons is on record for eating a wallaby weighing as much as 50lb/22.7kg). This species also eats other snakes, including other pythons – a 6½ft (2m) specimen was once recorded eating an Amethystine Python (*Morelia amethistina*) of the same length.

• **OCCURRENCE** New Guinea and E. Indonesia. In low monsoon forest, savanna woodland, and savanna.

• **REPRODUCTION** Lays 15–25 eggs.



Length 12–14ft (3.6–4.3m)	Diet	Activity ☾

Family PYTHONIDAE	Species *Aspidites melanocephalus*	Status Locally common

BLACK-HEADED PYTHON

This python has a light brown body with darker zigzag cross-bars; the head and neck are jet-black. It spends much of its time underground, in mammal or lizard burrows. Lizards and snakes, even venomous ones, are the primary prey.

• OCCURRENCE N. Australia. In a range of habitats, including savanna, woodland, and rocky areas.



AUSTRALIA

• REPRODUCTION Lays 6–18 eggs.

• SIMILAR SPECIES Woma (*Aspidites ramsayi*).



Length 6–10ft (1.8–3m)	Diet	Activity

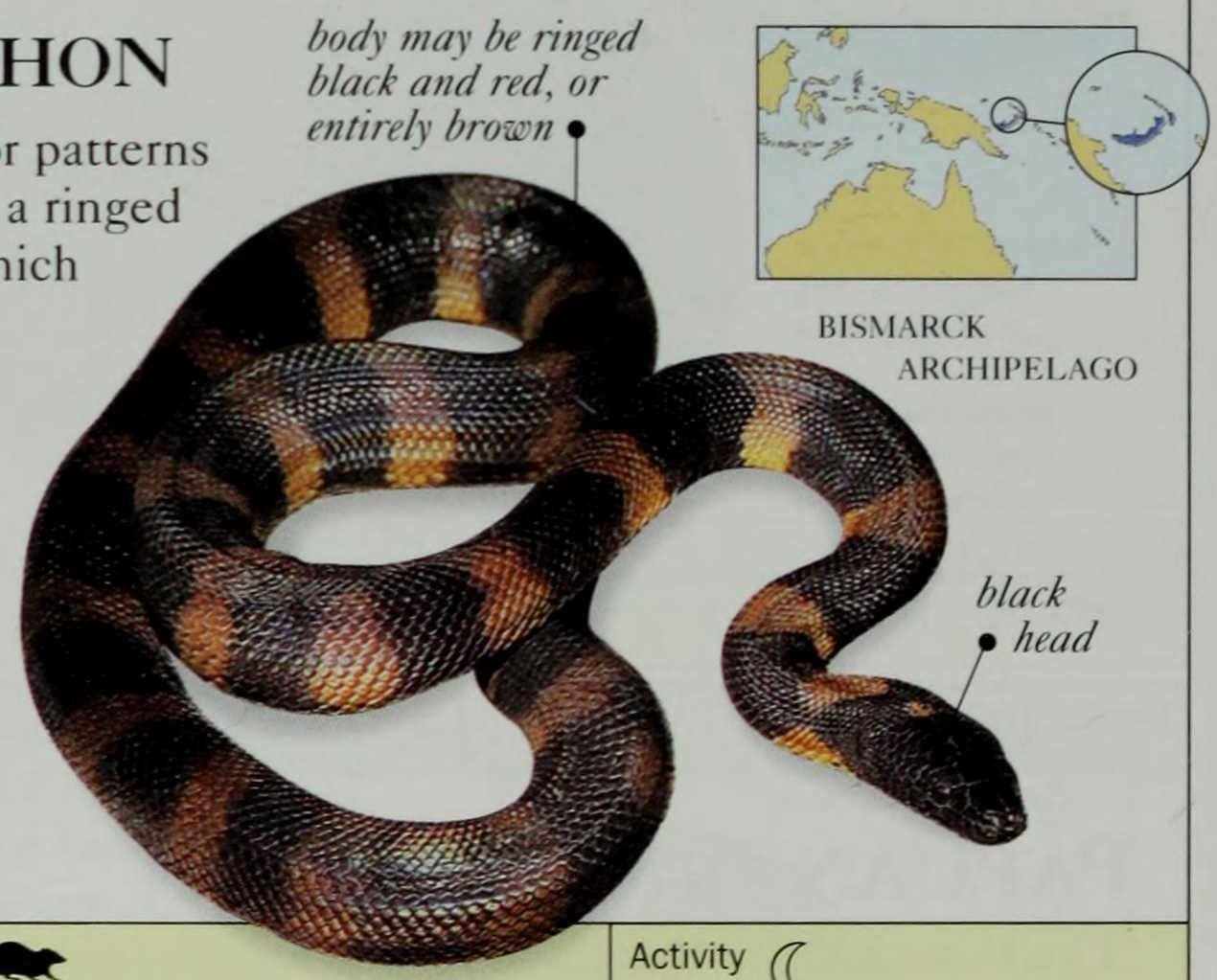
Family PYTHONIDAE	Species *Bothrochilus boa*	Status Locally common

BISMARCK RINGED PYTHON

There appear to be at least two distinct color patterns in adult Bismarck Ringed Pythons. There is a ringed black-and-orange form with a black head, which retains the vivid juvenile patterning, and a completely brown form. In addition to hunting lizards, this python may also prey on other snakes. It is secretive, terrestrial, and thought to spend some of its time in underground burrows.

• OCCURRENCE Bismarck Archipelago, Papua New Guinea. In rainforest and on plantations.

• REPRODUCTION Lays 10–12 eggs.



BISMARCK ARCHIPELAGO

Length 3–5½ft (0.9–1.7m)	Diet	Activity

Family PYTHONIDAE	Species *Calabaria reinhardti*	Status Common

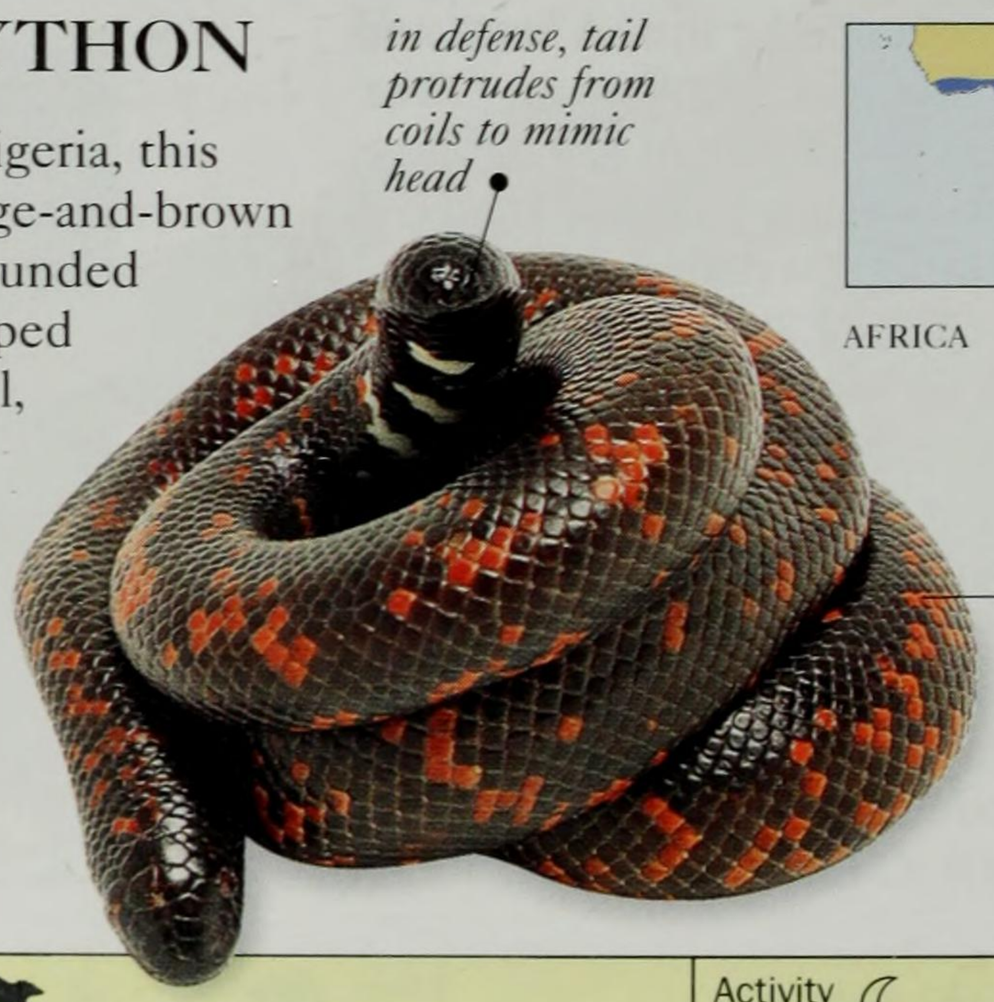
CALABAR GROUND PYTHON

Named after the province of Calabar in Nigeria, this species is a short, cylindrical, mottled orange-and-brown snake with smooth scales. It has a small, rounded head with tiny eyes, and a short, round-tipped tail. When molested, it rolls into a tight ball, often with its head protected inside.

• OCCURRENCE W. Africa. In rainforest and on plantations.

• REPRODUCTION Lays 1–4 eggs.

• REMARK Some authors consider this python to be more closely related to the North American Rubber Boa (*Charina bottae*, p.112) than to other pythons.





AFRICA

Length 3–3½ft (0.9–1.1m)	Diet	Activity

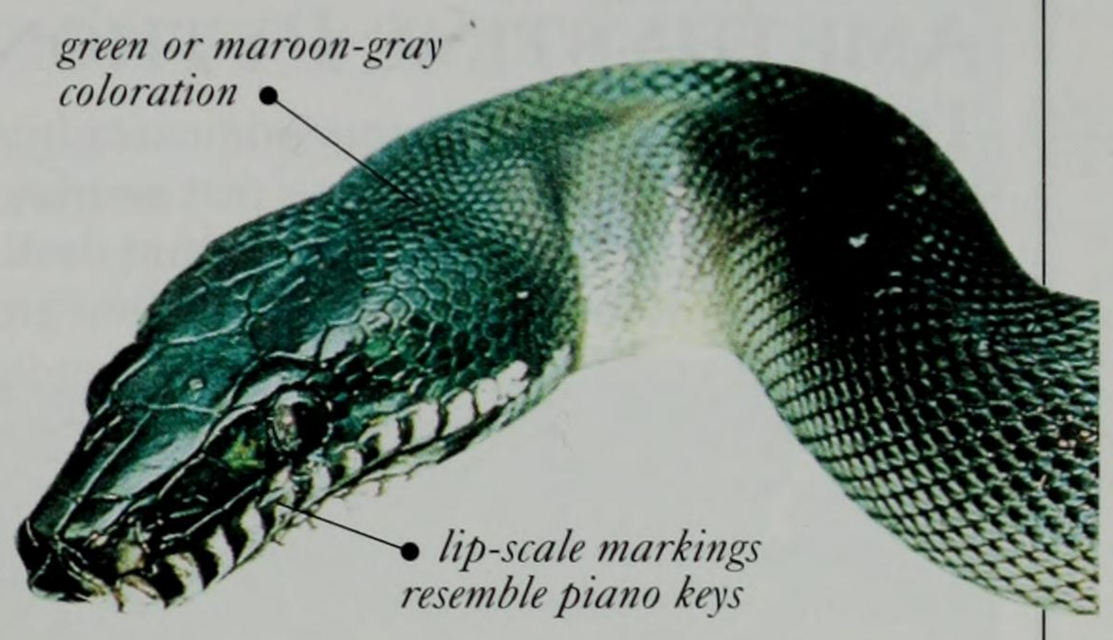
Family PYTHONIDAE	Species *Leiopython albertisii*	Status Common

WHITE-LIPPED PYTHON

In New Guinea the White-lipped Python, also known as D'Albertis Python, varies considerably in color and size. Specimens from the north coast reach 6ft (1.8m) in length; they are deep brown in color, with a contrasting black head and black-and-white lip scales that look like piano keys. The southern coastal specimens are larger – about 8ft (2.4m) long – and a darker maroon-gray or green that contrasts far less with the head color. Although found in a wide variety of habitats, the White-lipped Python shows a preference for damp forests. The population in the Manus Islands, to the north of New Guinea, is separated from the mainland by several large islands on which the sole python is the Bismarck Ringed Python (*Bothrochilus boa*, opposite).

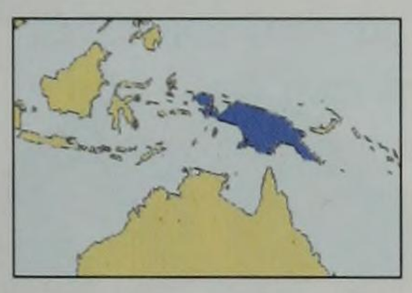
• **OCCURRENCE** New Guinea and nearby islands. In monsoon forest and rainforest.

• **REPRODUCTION** Lays 8–15 eggs.



SOUTHERN WHITE-LIPPED PYTHON





NEW GUINEA

NORTHERN WHITE-LIPPED PYTHON

Length 6–8ft (1.8–2.4m)	Diet	Activity

Family PYTHONIDAE	Species *Liasis fuscus*	Status Locally common

BROWN WATER PYTHON

Olive-brown to black above, this python has a yellow or white underside and lips. It is the only Australasian python to feed on young crocodiles as well as the more usual prey of mammals and birds.

• **OCCURRENCE** N. Australia and S. New Guinea. In swamps and creeks.

• **REPRODUCTION** Lays 6–23 eggs.

• **SIMILAR SPECIES** Macklot's Python (*Liasis mackloti*).



AUSTRALASIA



Length 6½–10ft (2–3m)	Diet	Activity

Family PYTHONIDAE	Species *Morelia amethistina*	Status Common

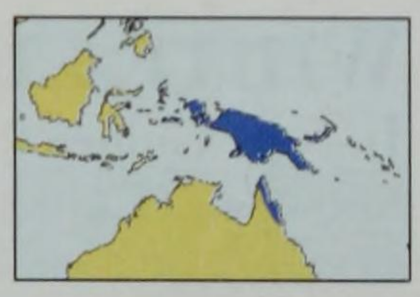
AMETHYSTINE PYTHON

This python's common name originates from the iridescent, amethyst-like sheen that overlays the dorsal pattern, which may be light and dark brown, or uniform yellow-brown or olive-green. The Amethystine Python has a long, slender head, covered in enlarged scales, and large, forward-facing eyes. The rows of heat-sensitive labial pits are plainly visible on the snout and the lip scales of the mouth. This agile python climbs and swims with ease.

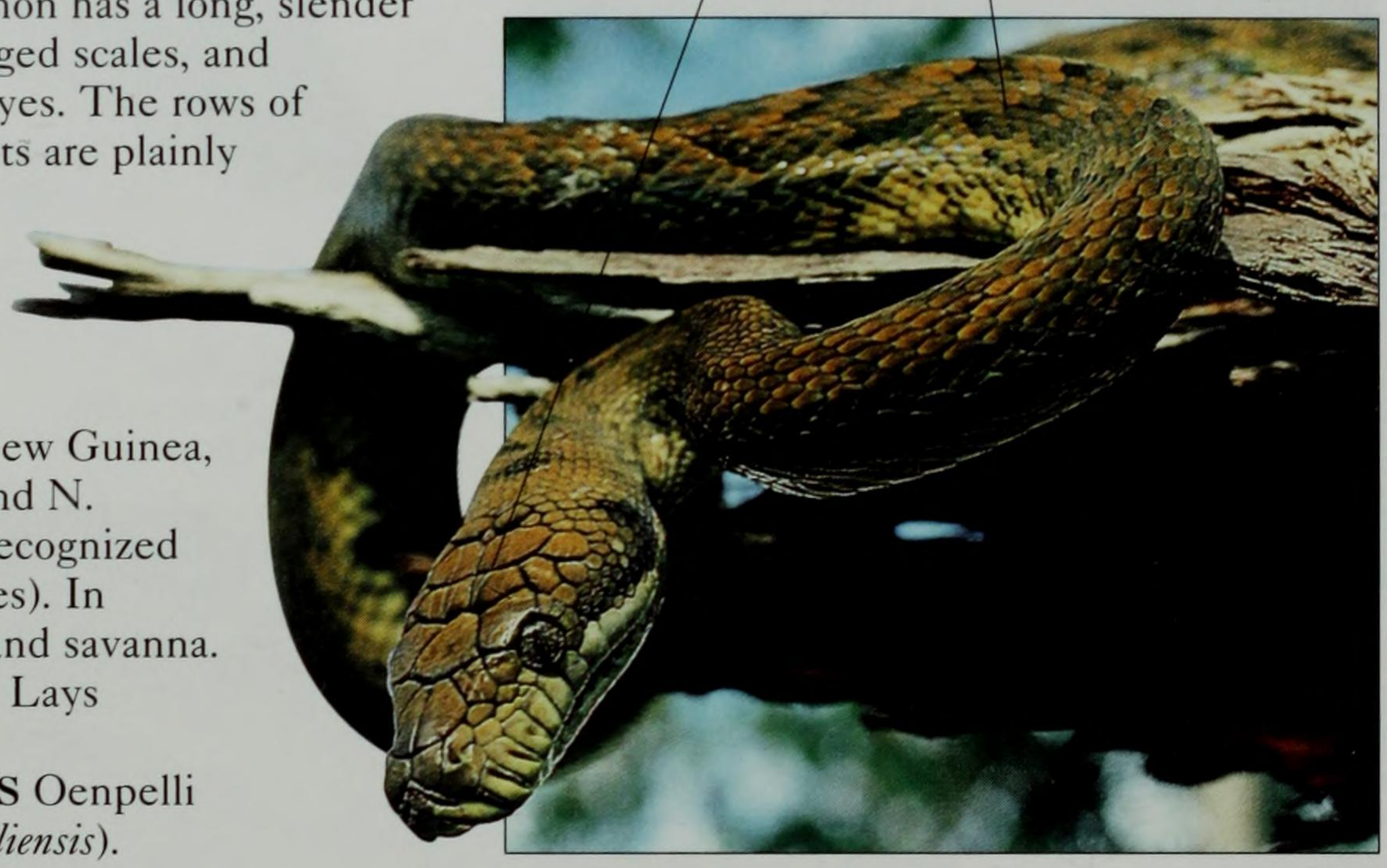
• **OCCURRENCE** New Guinea, neighboring islands, and N. Australia (where it is recognized as a separate subspecies). In rainforest, woodland, and savanna.

• **REPRODUCTION** Lays 5–21 eggs.

• **SIMILAR SPECIES** Oenpelli Python (*Morelia oenpelliensis*).



AUSTRALASIA



Length 8–28ft (2.4–8.5m)	Diet	Activity

Family PYTHONIDAE	Species *Morelia spilota*	Status Common

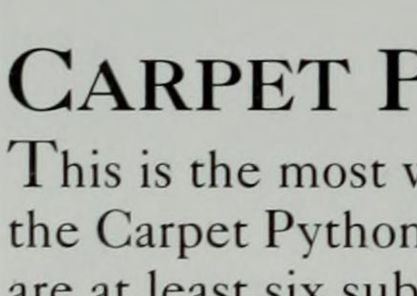
CARPET PYTHON

This is the most widespread of all Australian pythons. Typically, the Carpet Python is yellow with brown cross-barring, but there are at least six subspecies in Australia and New Guinea, some of which show other coloration and patterning. The Jungle Carpet Python (*Morelia spilota cheyni*) from Queensland (shown here) is black and yellow, with stripes and large spots, while the Diamond Python (*M. spilota spilota*) of New South Wales has a black edge around every yellow scale, presenting a fine, intricate network pattern.

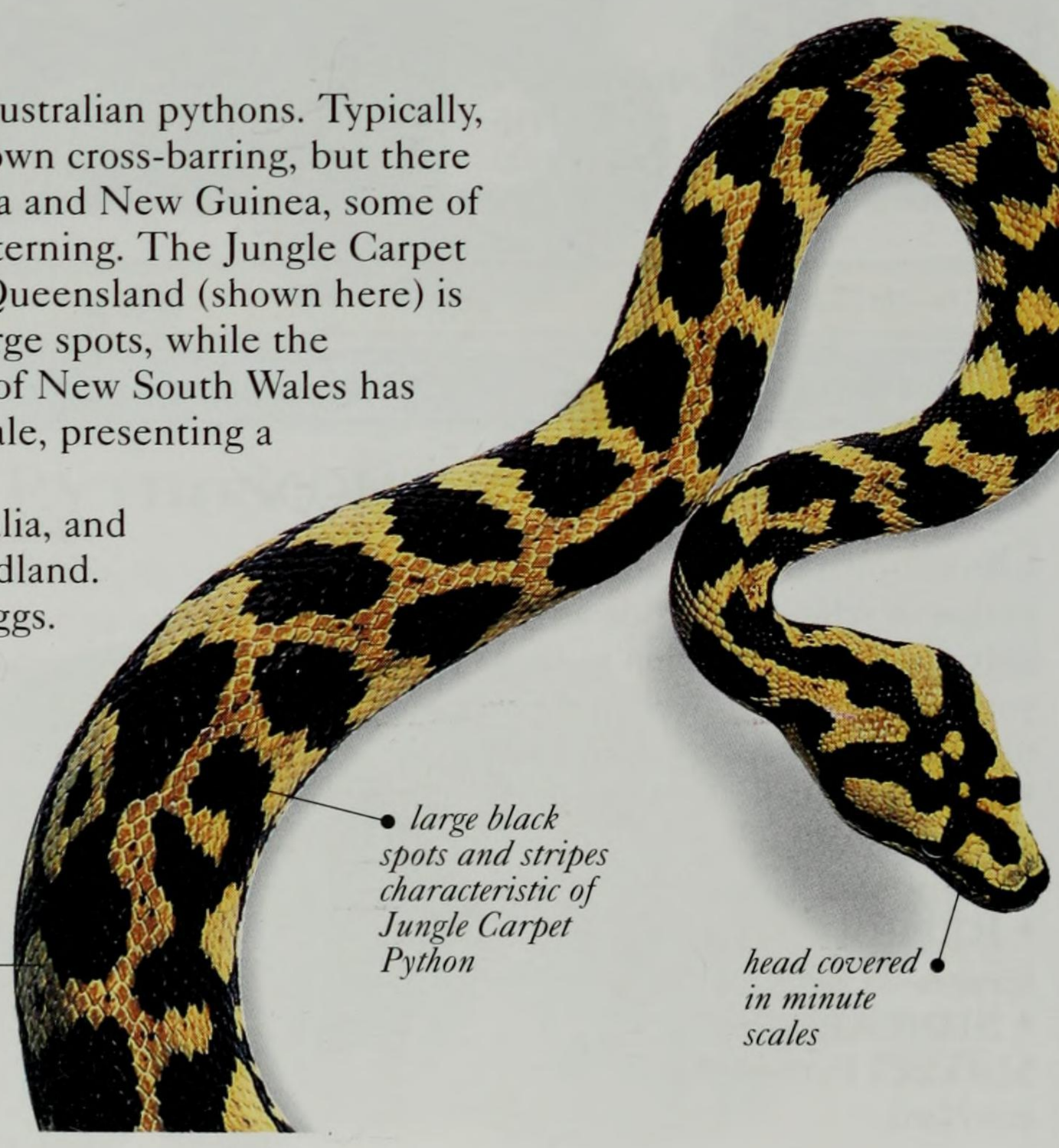
• **OCCURRENCE** N., E., S. Australia, and S. New Guinea. In savanna and woodland.

• **REPRODUCTION** Lays 12–54 eggs.

• **SIMILAR SPECIES** Centralian Python (*M. bredli*), Rough-scaled Python (*M. carinata*).



AUSTRALASIA



Length 6½–13ft (2–4m)	Diet	Activity

Family PYTHONIDAE	Species *Morelia boeleni*	Status Rare

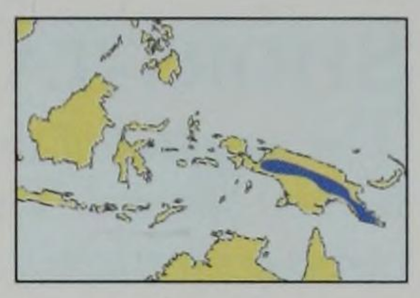
BOELEN'S PYTHON

This is a powerful python with a broad head and body. The striking pattern of iridescent blue-black, combined with the cream diagonal stripes on the throat and neck, and the black-and-white barring on the lips, are all highly distinctive. The eyes are large, with vertical pupils. Juveniles are red-brown. The natural history of Boelen's Python is poorly known owing to its fragmented range in the remote interior of New Guinea. It appears to prefer low-light, high-humidity habitats.

• **OCCURRENCE** New Guinea. In montane rainforest, above 3,280ft (1,000m).

• **REPRODUCTION** Lays 14–20 eggs.

• **REMARK** This species is the most protected reptile in Papua New Guinea.



NEW GUINEA

black-and-white barring on lips

yellow-white markings extend upward from underside



Length 6–8ft (1.8–2.4m)	Diet	Activity

Family PYTHONIDAE	Species *Morelia viridis*	Status Common

GREEN TREE PYTHON

The adult Green Tree Python is bright green with white, yellow, or light blue flecks along the sides and back and a yellow underside. The head scales are small and granular. Juveniles may be yellow, green, or orange, with black-and-white markings but, as the snake matures, the center of each scale becomes green and later the entire snake changes color. It is an arboreal species, with a prehensile tail, but it visits the ground to hunt. Juveniles use the black-and-white tail tip to attract lizards but, in adults, the tail color contrast declines as their prey shifts to small mammals.

• **OCCURRENCE** New Guinea and N. Australia. In tropical rainforest.

• **REPRODUCTION** Lays 6–30 eggs.

• **SIMILAR SPECIES** Emerald Tree Boa (*Corallus caninus*, p.112).



AUSTRALASIA

bright green body, sometimes with dorsal markings

stripes across eyes

powerful, agile body

ADULT

yellow, green, or orange body with black-edged white markings

JUVENILE

Length 3–5ft (1–1.5m)	Diet	Activity

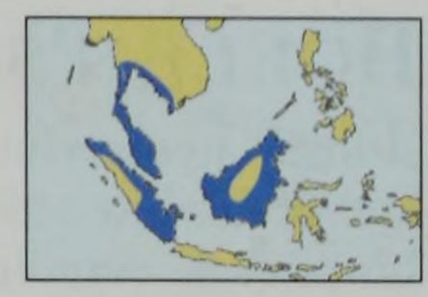
Family PYTHONIDAE	Species *Python curtus*	Status Rare

SHORT-TAILED PYTHON

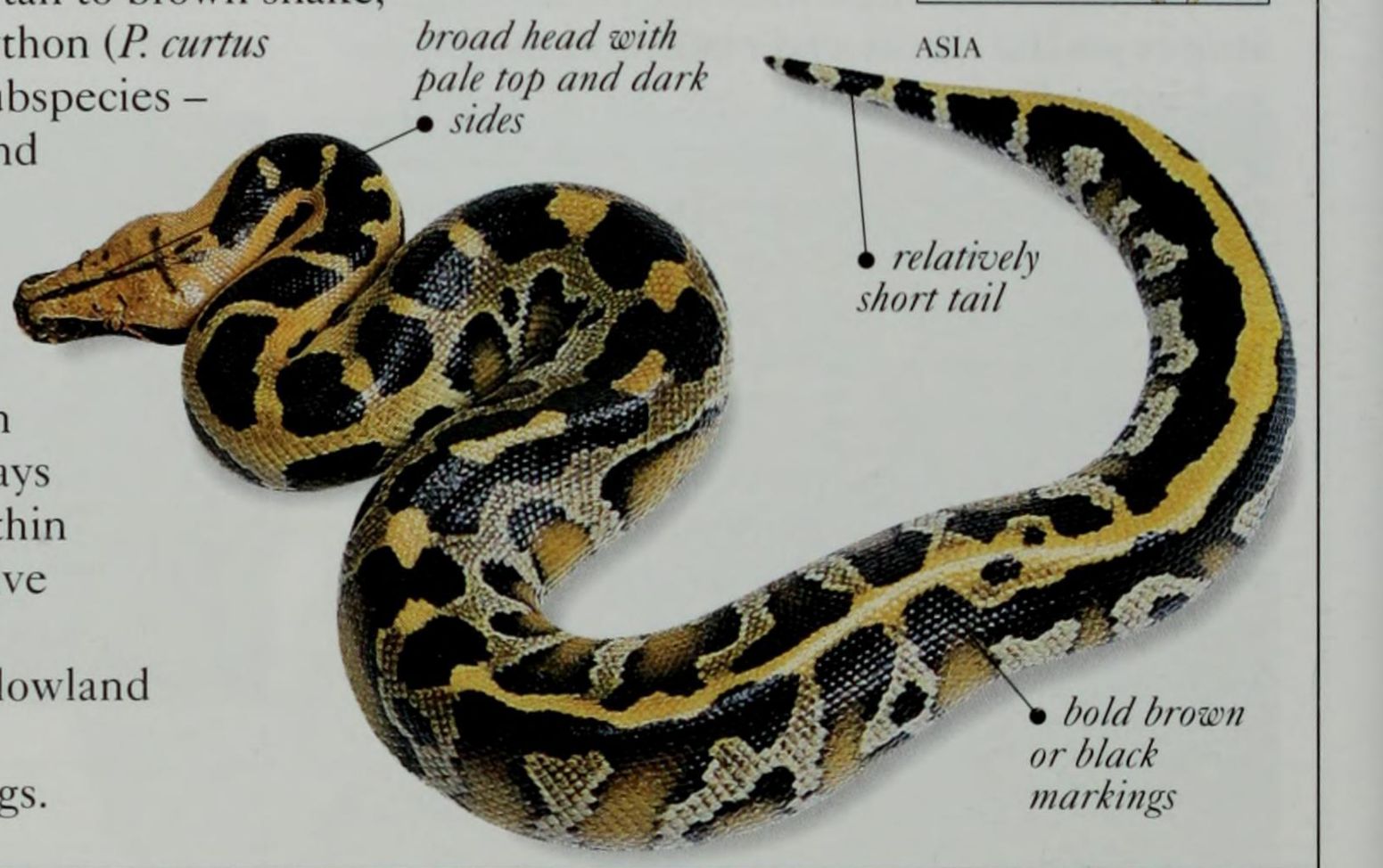
The smallest of the Asian pythons, this is a sedentary, stout-bodied species. The Borneo Short-tailed Python (*Python curtus breitensteini)*, shown here, is a tan to brown snake, while the Sumatran Short-tailed Python (*P. curtus curtus)* is almost black. The third subspecies – from Thailand, eastern Malaysia, and Sumatra – is red-colored and known as the Blood Python (*P. curtus brongersmai*). It has a longer tail than its relatives. Short-tailed Pythons remain hidden in the leaf-litter or vegetation for days waiting for suitable prey to pass within strike range. They have an aggressive nature and are quick to bite.

• **OCCURRENCE** S.E. Asia. In lowland rainforest and marshes.

• **REPRODUCTION** Lays 12 eggs.



ASIA



Length 6–10ft (1.8–3m)	Diet	Activity ☾

Family PYTHONIDAE	Species *Python molurus*	Status Endangered

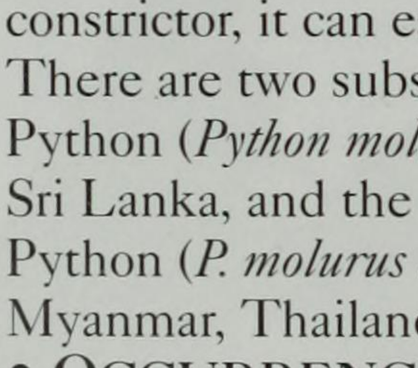
INDIAN ROCK PYTHON

With its distinctive pattern of irregular brown saddles over yellow or gray, this large python is easily recognized. It also has a broad brown arrow shape on top of the head. A very powerful constrictor, it can easily kill and swallow a deer. There are two subspecies, the Indian Rock Python (*Python molurus molurus*) from India and Sri Lanka, and the darker Burmese Rock Python (*P. molurus bivittatus*), shown below, from Myanmar, Thailand, south China, and Vietnam.

• **OCCURRENCE** S. Asia. In low monsoon forest, savanna woodland, and savanna.

• **REPRODUCTION** Lays 20–50 eggs.

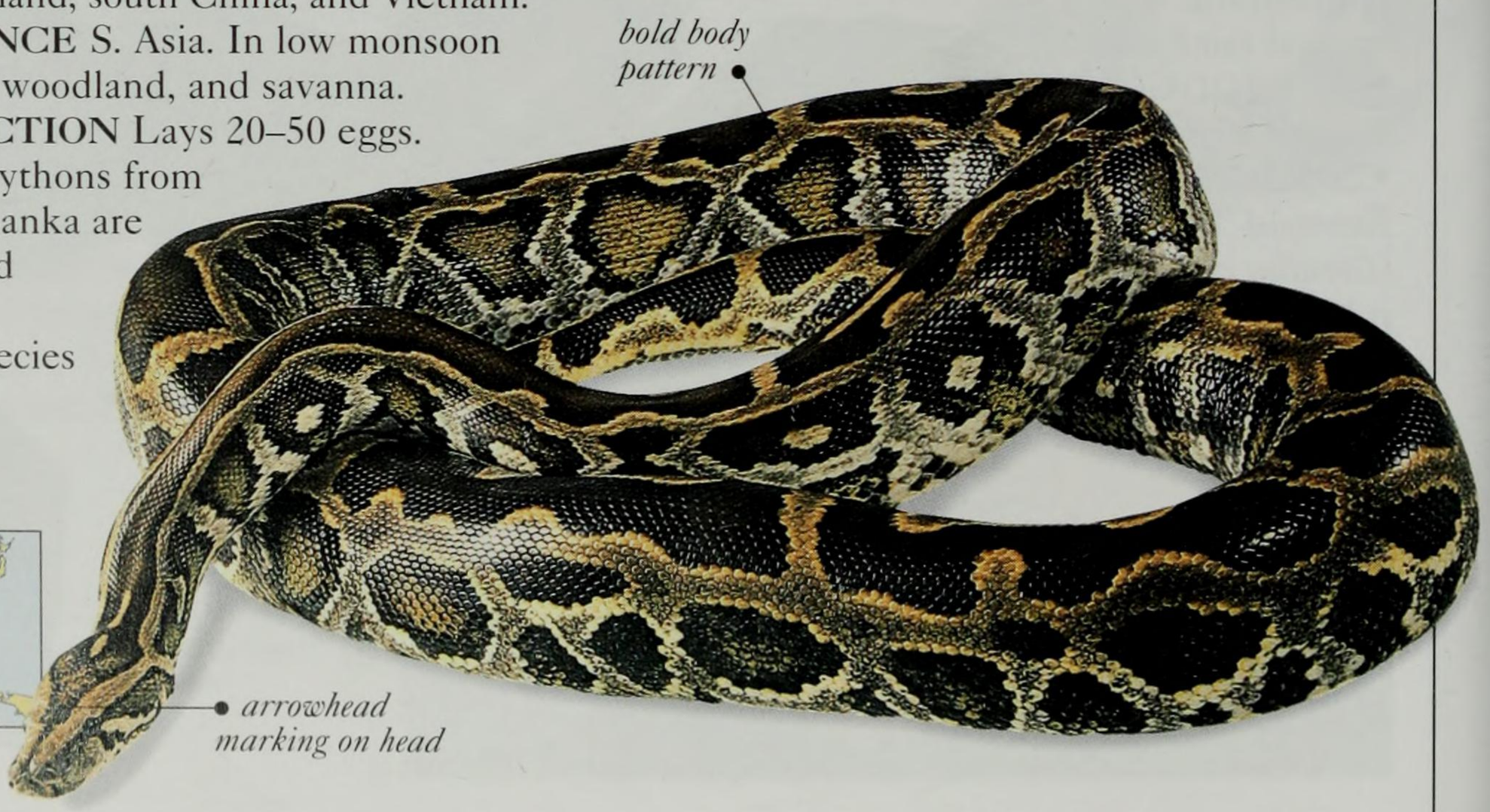
• **REMARK** Pythons from India and Sri Lanka are endangered and protected; the Burmese subspecies may be locally common.



ASIA







Length 16½–23ft (5–7m)	Diet	Activity ☾

Family PYTHONIDAE	Species *Python regius*	Status Locally common

ROYAL PYTHON

A small python with a pattern of rounded brown saddles on a black background, the Royal Python has a stout body, a small, rounded head, and a short tail. It is also known as the Ball Python because, when threatened, it rolls into a tight ball with its head in the center. These pythons are popular as pets, which has led to too many being taken in parts of west Africa; wild populations may be threatened.

• **OCCURRENCE** W. and C. Africa. In lowland rainforest.

• **REPRODUCTION** Lays 6–8 eggs.

• **SIMILAR SPECIES** Angola Python (*Python anchietae*).





AFRICA

Length 3–5ft (1–1.5m)	Diet	Activity

Family PYTHONIDAE	Species *Python reticulatus*	Status Locally common

RETICULATED PYTHON

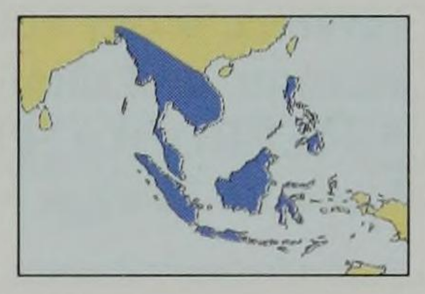
This giant species may be gray or olive-green, overlaid with a netlike pattern of black, yellow, and light gray, which gives it its common name. It has an olive-green, gray, or bright yellow head, with a black stripe at the midvein and two fine stripes extending from the rear of its orange eyes. Although slender for its length, it is a powerful predator; there are several records of humans that have been killed and eaten by Reticulated Pythons.

• **OCCURRENCE** S.E. Asia. In rainforest, woodland, savanna, and cultivated land.

• **REPRODUCTION** Lays 30–100 eggs.

• **SIMILAR SPECIES** Timor Python (*Python timoriensis*).

• **REMARK** This is a rival to the Green Anaconda (*Eunectes murinus*, p.115) for the title of the world's longest snake.



ASIA



Length 20–33ft (6–10m)	Diet	Activity

Family PYTHONIDAE	Species *Python sebae*	Status Common

AFRICAN ROCK PYTHON

This python is the largest African snake. It is light brown, with overlaying irregular, dark brown saddles and a large, broad, dark brown, arrow-shaped marking on top of its head. African Rock Pythons are extremely powerful predators, easily capable of killing and swallowing large mammals such as antelopes and goats; there are several records of these pythons eating humans. There are two subspecies: *Python sebae sebae* and *P. sebae natalensis* (shown here); the latter has more fragmented head scales.

• **OCCURRENCE** Sub-Saharan Africa (endangered in the south). In various habitats including woodland, savanna, rocky outcrops, swamps, and rainforest.

• **REPRODUCTION** Lays 30–50 eggs.



AFRICA



Length 16½–23ft (5–7m)	Diet	Activity

Family ACROCHORDIDAE	Species *Acrochordus arafurae*	Status Common

ARAFURA FILESNAKE

This gray or reddish brown filesnake is fully aquatic, so its body is unlike that of a terrestrial or arboreal snake. It has an extremely loose-fitting skin, which flattens like an oar in the water, enabling it to swim gracefully. The loose skin together with the lack of large ventral scales inhibit movement on land.

• **OCCURRENCE** New Guinea and N. Australia. In slow-moving freshwater rivers, lakes, and swamps.

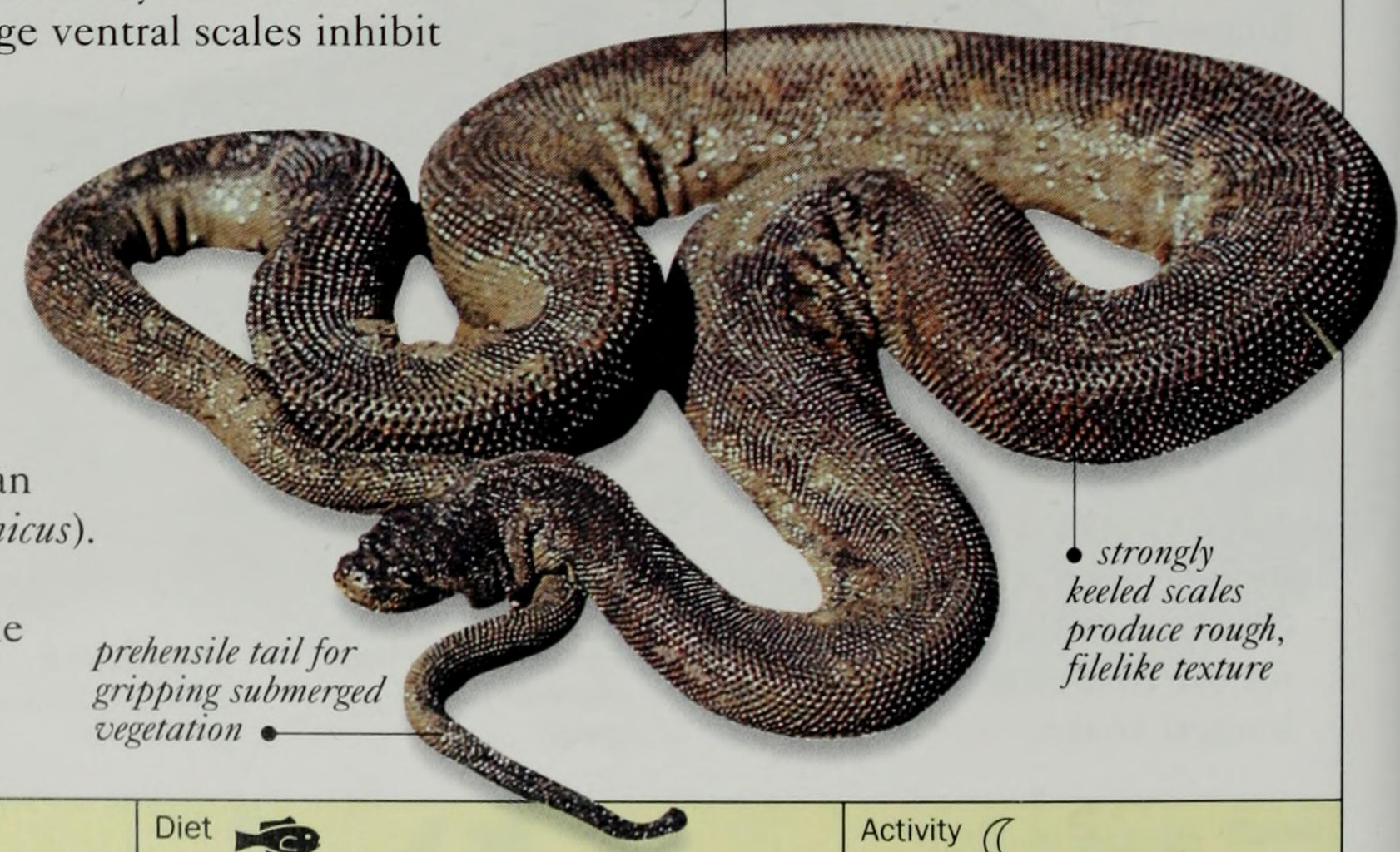
• **REPRODUCTION** Live-bearing, 17 neonates.

• **SIMILAR SPECIES** Javan Filesnake (*Acrochordus javanicus*).

• **REMARK** The skins of this species are used to make the traditional "kundu" drums in New Guinea.



AUSTRALASIA



Length 5–8ft (1.5–2.5m)	Diet	Activity

Family ACROCHORDIDAE	Species *Acrochordus granulatus*	Status Locally common

LITTLE FILESNAKE

The only marine member of its genus, the Little Filesnake is smaller than its two freshwater relatives (*Acrochordus arafurae*, opposite, and *A. javanicus*) but is the most widely distributed. It is brown, often with orange or brown cross-bands. Its diet consists of fish and crustaceans.

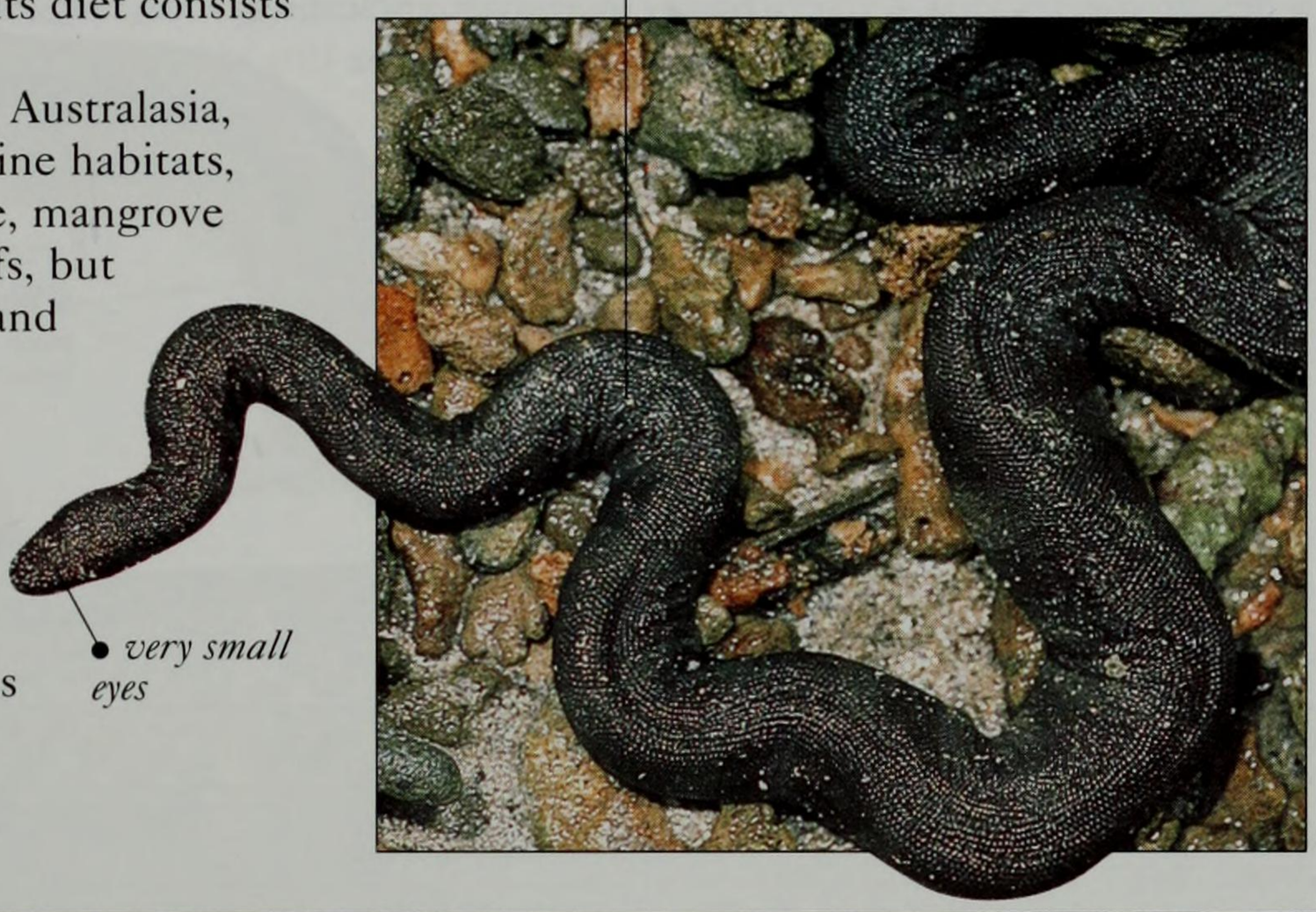
• **OCCURRENCE** S.E. Asia, Australasia, and W. Pacific. In inshore marine habitats, primarily in the intertidal zone, mangrove swamps, and inshore coral reefs, but also enters brackish estuaries and freshwater swamps.

• **REPRODUCTION** Live-bearing, 4–12 neonates.

• **REMARK** Like other filesnakes, the Little Filesnake has rough skin with tuberculate protuberances that are used for gripping slippery prey, such as fish, in the water.



ASIA, OCEANIA



Length 2–4ft (0.6–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Ahaetulla nasuta*	Status Common

LONG-NOSED WHIPSNAKE

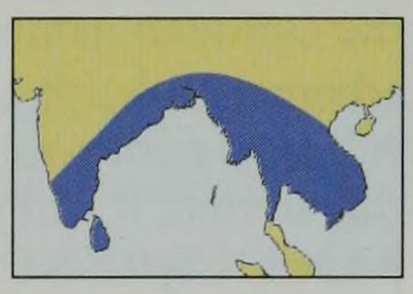
The Long-nosed Whipsnake (formerly known as *Dryophis nasutus*) may be gray, brown, or green. It is an extremely slim-bodied species, with a very long tail, and a slender, pointed head, with a short projection on the tip of the snout. Long-nosed Whipsnakes have extremely good vision. Their eyes have horizontal pupils, which view down grooves that run along the snout, enabling them to locate and capture alert, camouflaged lizards quickly and easily. This mildly venomous whipsnake stalks its prey in a jerky motion that resembles the movement of the surrounding vegetation.

• **OCCURRENCE** S. and S.E. Asia. In rainforest and on cultivated land.

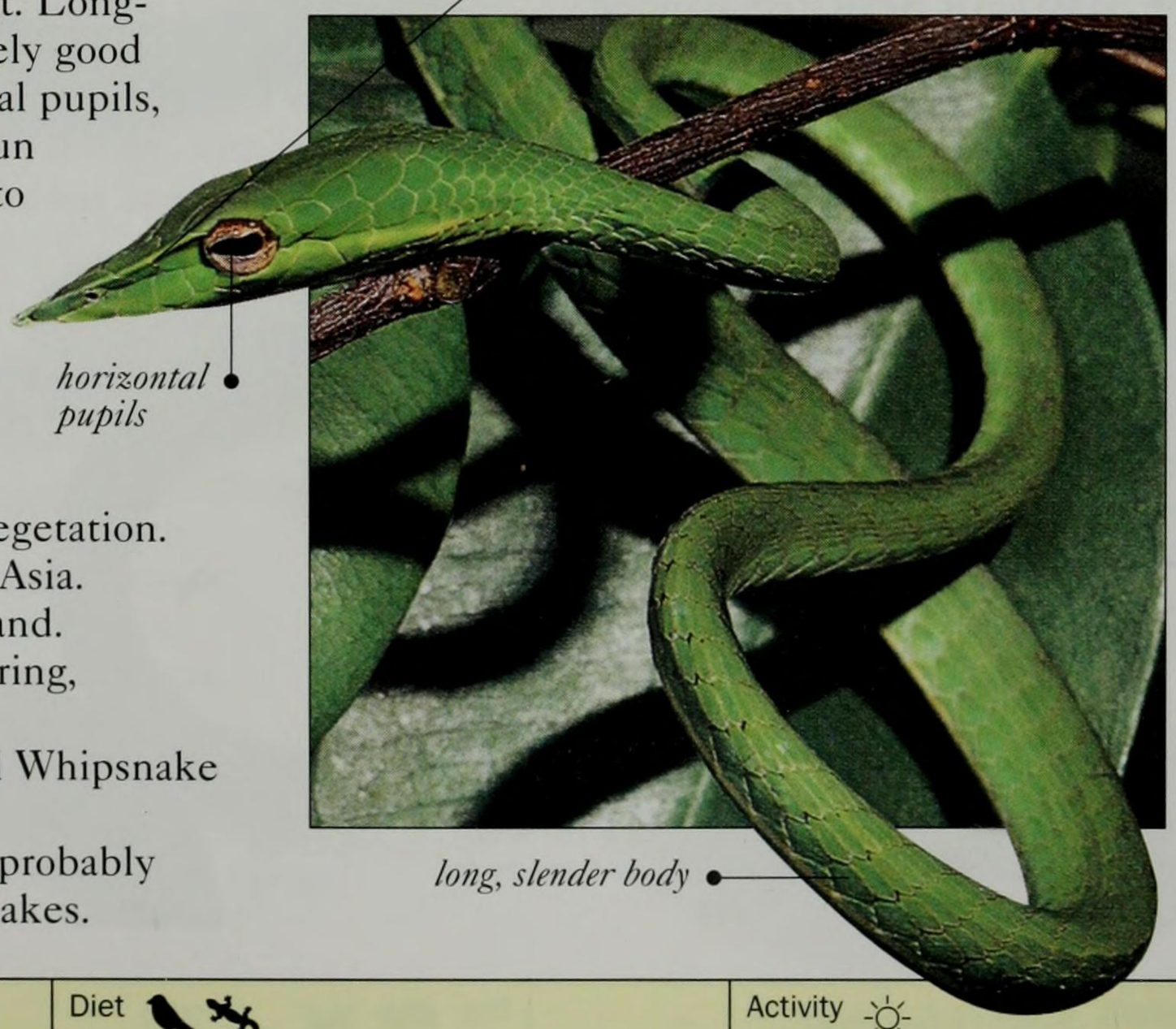
• **REPRODUCTION** Live-bearing, 3–23 neonates.

• **SIMILAR SPECIES** Oriental Whipsnake (*Ahaetulla prasina*).

• **REMARK** Asian whipsnakes probably possess the best vision of any snakes.



ASIA



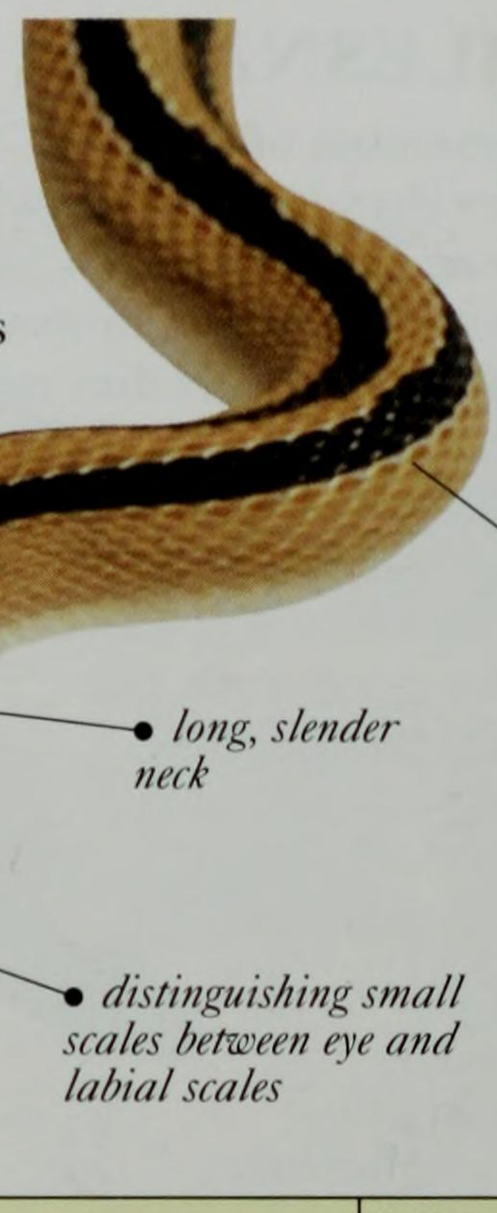
Length 3–4ft (1–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Bogertophis subocularis*	Status Locally common

TRANS-PECOS RATSNAKE

The coloration of this slender-bodied snake is yellow to tan, with two dark brown or black stripes running down the back. These may be joined to form "H" markings, giving a broken ladder effect. The Trans-Pecos Ratsnake is a desert species that actively hunts mammals, including bats, and other prey at night. It is most likely to be encountered crossing roads.

- **OCCURRENCE** S.W. US and Chihuahua Desert, N. Mexico. In rocky, desert scrub.
- **REPRODUCTION** Lays 3–7 eggs.
- **SIMILAR SPECIES** Santa Rosa Ratsnake (*Bogertophis rosaliae*).
- **REMARK** This species may be distinguished from other ratsnakes (*Elaphe* species, pp.132–36) by a row of small scales under the eye.





N. AMERICA

Length 3–5½ft (0.9–1.7m)	Diet	Activity ☾

Family COLUBRIDAE	Species *Boiga cyanea*	Status Common

GREEN CATSNAKE ☠

This species has bright green scales, a light blue throat, and black interstitial skin. Its large, light gray eyes have vertical pupils, like those of cats – hence the common name. Juveniles are brick-red with a green head. A slender, arboreal snake, it easily subdues lizards, other snakes, and small mammals with its venom, sometimes also using constriction to restrict the prey. If threatened, it will gape widely, exposing the black interior of its mouth.

- **OCCURRENCE** S.E. Asia. In rainforest.
- **REPRODUCTION** Lays 4–13 eggs.
- **SIMILAR SPECIES** Banded Green Catsnake (*Boiga saengsomi*).



ASIA



JUVENILE

ADULT

Length 5–6ft (1.6–1.9m)	Diet	Activity ☾

Family COLUBRIDAE	Species *Boiga dendrophila*	Status Common

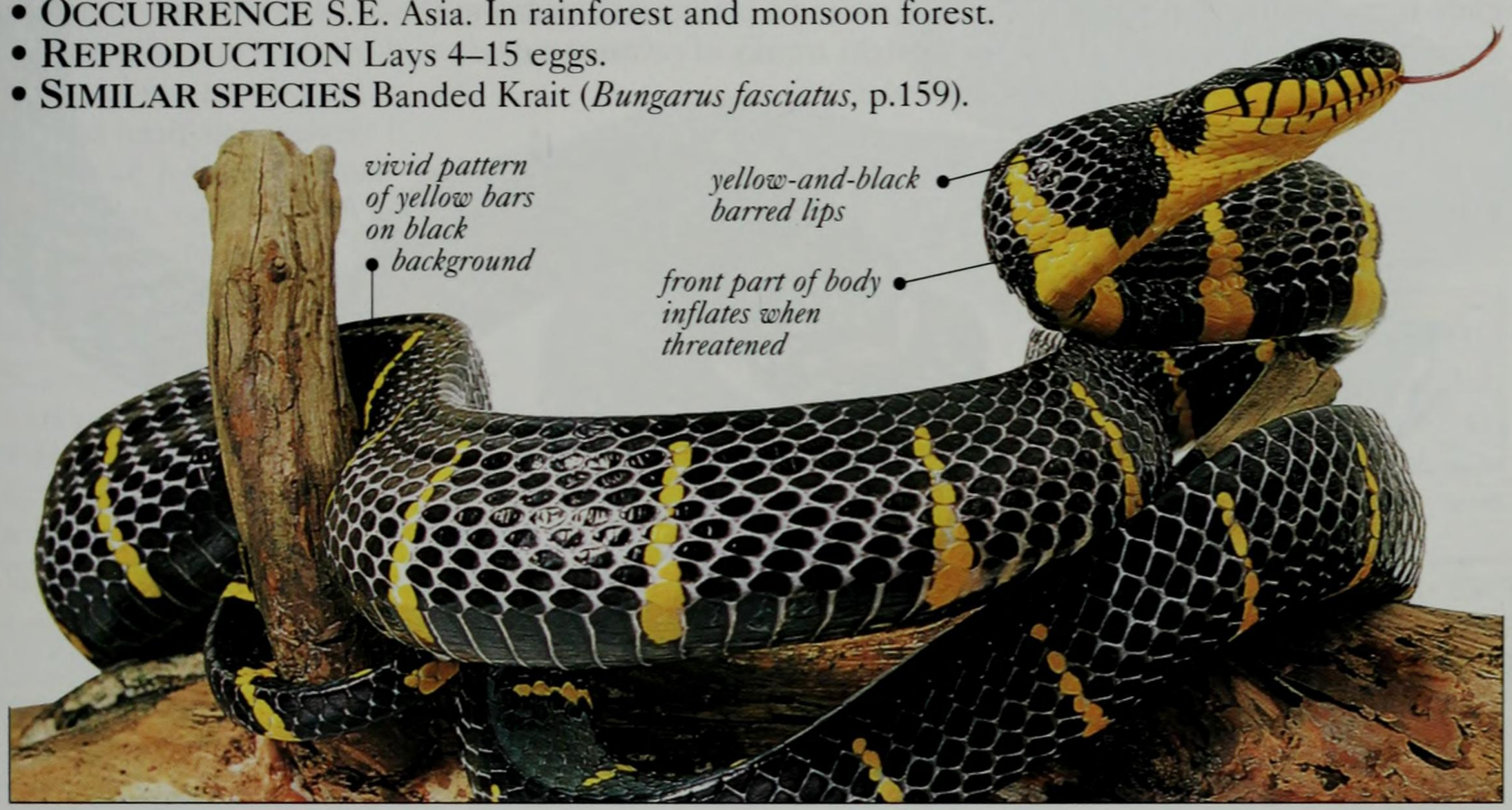
MANGROVE SNAKE ☠



ASIA

This is one of the largest arboreal snakes in Asia. It is glossy black, with yellow bars on the sides, yellow lips and throat, a black-and-yellow underside, and gray eyes with vertical pupils. The head and mouth are large, enabling the snake to swallow birds' eggs and even squirrels. It will bite and chew tenaciously, and may inject significant amounts of venom.

- **OCCURRENCE** S.E. Asia. In rainforest and monsoon forest.
- **REPRODUCTION** Lays 4–15 eggs.
- **SIMILAR SPECIES** Banded Krait (*Bungarus fasciatus*, p.159).



Length 6½–8ft (2–2.5m)	Diet	Activity

Family COLUBRIDAE	Species *Boiga irregularis*	Status Common

BROWN CATSNAKE ☠



ASIA, AUSTRALASIA

This extremely agile Australasian catsnake may be brown, red, yellow, pink, or even barred. It has a very long tail and a slender, laterally compressed body with enlarged vertebral scales. The head is large, with big, bulbous eyes. The Brown Catsnake has been accidentally introduced to Guam in the North Pacific, where it has eaten several species of flightless birds into extinction. It has no predators there, and grows to a larger than normal size. It has also given children some alarming bites. There is a major program to eradicate this snake from Guam.

- **OCCURRENCE** Indonesia, New Guinea, and N. Australia. (Introduced to Guam.) In lowland woodland and coastal forest.
- **REPRODUCTION** Lays 6 eggs.
- **SIMILAR SPECIES** Dog-toothed Catsnake (*Boiga cynadon*).



Length 6½–7½ft (2–2.3m)	Diet	Activity

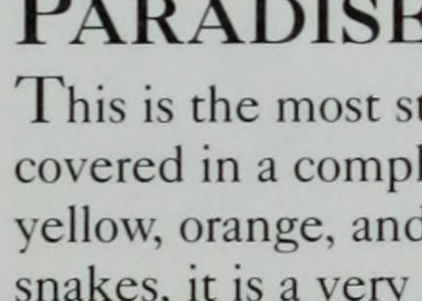
Family COLUBRIDAE	Species *Chrysopelea paradisi*	Status Rare

PARADISE FLYING SNAKE

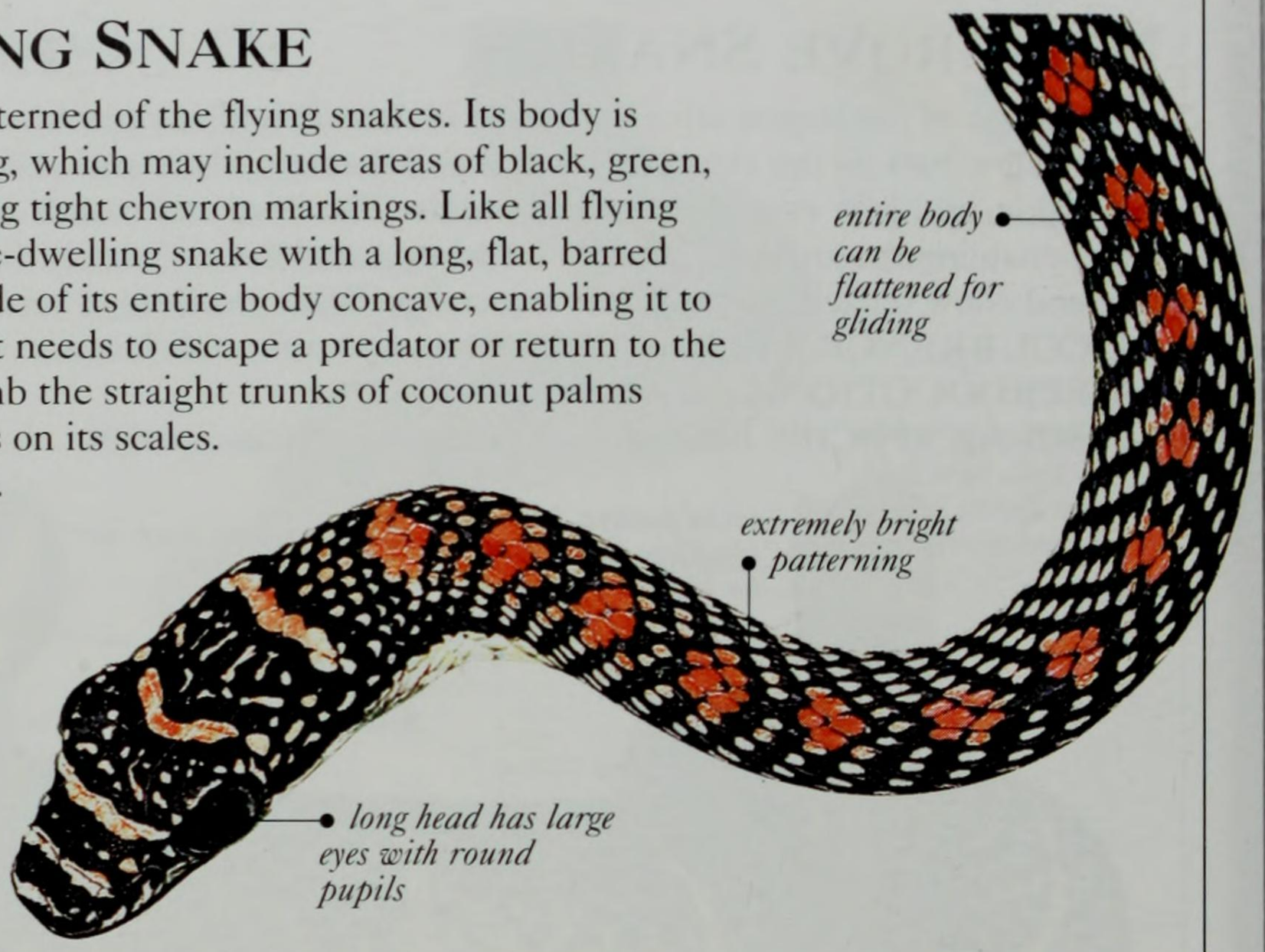
This is the most strikingly patterned of the flying snakes. Its body is covered in a complex speckling, which may include areas of black, green, yellow, orange, and red, forming tight chevron markings. Like all flying snakes, it is a very slender, tree-dwelling snake with a long, flat, barred head. It can make the underside of its entire body concave, enabling it to glide from the treetops when it needs to escape a predator or return to the ground quickly. It can also climb the straight trunks of coconut palms rapidly using lengthwise ridges on its scales.

• **OCCURRENCE** S.E. Asia. In forest and gardens.

• **REPRODUCTION** Lays 5–8 eggs.



ASIA



Length 3–4ft (1–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Clelia clelia*	Status Rare

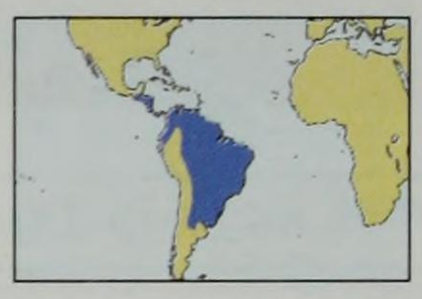
MUSSURANA ☠

As a juvenile, the Mussurana is coral-red with a black cap and nape patch, separated by a white collar. When it reaches maturity, it undergoes a dramatic color change, becoming dark blue-black above and white below. Mussuranas are stout-bodied snakes with flat heads. They specialize in feeding on other snakes, including some venomous lanceheads (*Bothrops* species), but they will also prey on lizards and mammals. Juvenile Mussuranas are indistinguishable from juvenile false coralsnakes (*Pseudoboa* species) except for the scales under the tail – these are paired in the Mussurana, and single in false coralsnakes. Found from Guatemala to Argentina and Uruguay, the Mussurana is protected internationally.

• **OCCURRENCE** Central and South America. In lowland rainforest.

• **REPRODUCTION** Lays 10–22 eggs.

• **SIMILAR SPECIES** Mexican Mussurana (*Clelia scytalina*).



C. & S. AMERICA



Length 6½–8ft (2–2.5m)	Diet	Activity

Family COLUBRIDAE	Species *Coluber viridiflavus*	Status Common

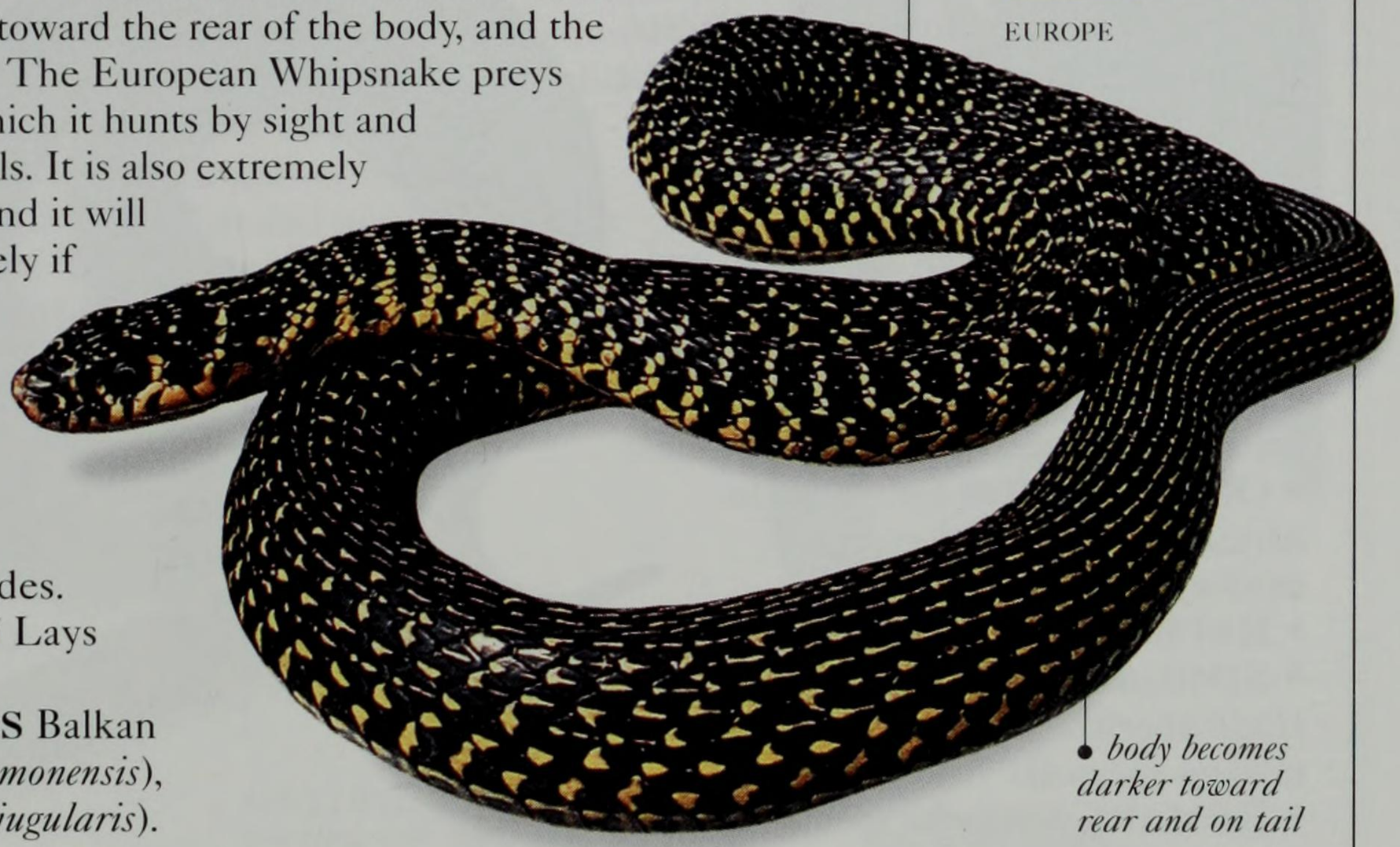
EUROPEAN WHIPSNAKE

This whipsnake is slender with a small head, large eyes with round pupils, and smooth scales. The front part of the body is yellow with broad, green-black cross-bars. These become increasingly dominant toward the rear of the body, and the tail is completely dark. The European Whipsnake preys primarily on lizards, which it hunts by sight and constricts within its coils. It is also extremely alert and fast moving and it will defend itself aggressively if molested. Juveniles hunt frogs, small lizards, grasshoppers, and moths.

- **OCCURRENCE** S. Europe. On dry, rocky and bushy hillsides.
- **REPRODUCTION** Lays 8–15 eggs.
- **SIMILAR SPECIES** Balkan Whipsnake (*Coluber gemonensis*), Large Whipsnake (*C. jugularis*).



EUROPE



Length 5–6½ft (1.5–2m)	Diet	Activity

Family COLUBRIDAE	Species *Coronella austriaca*	Status Locally common

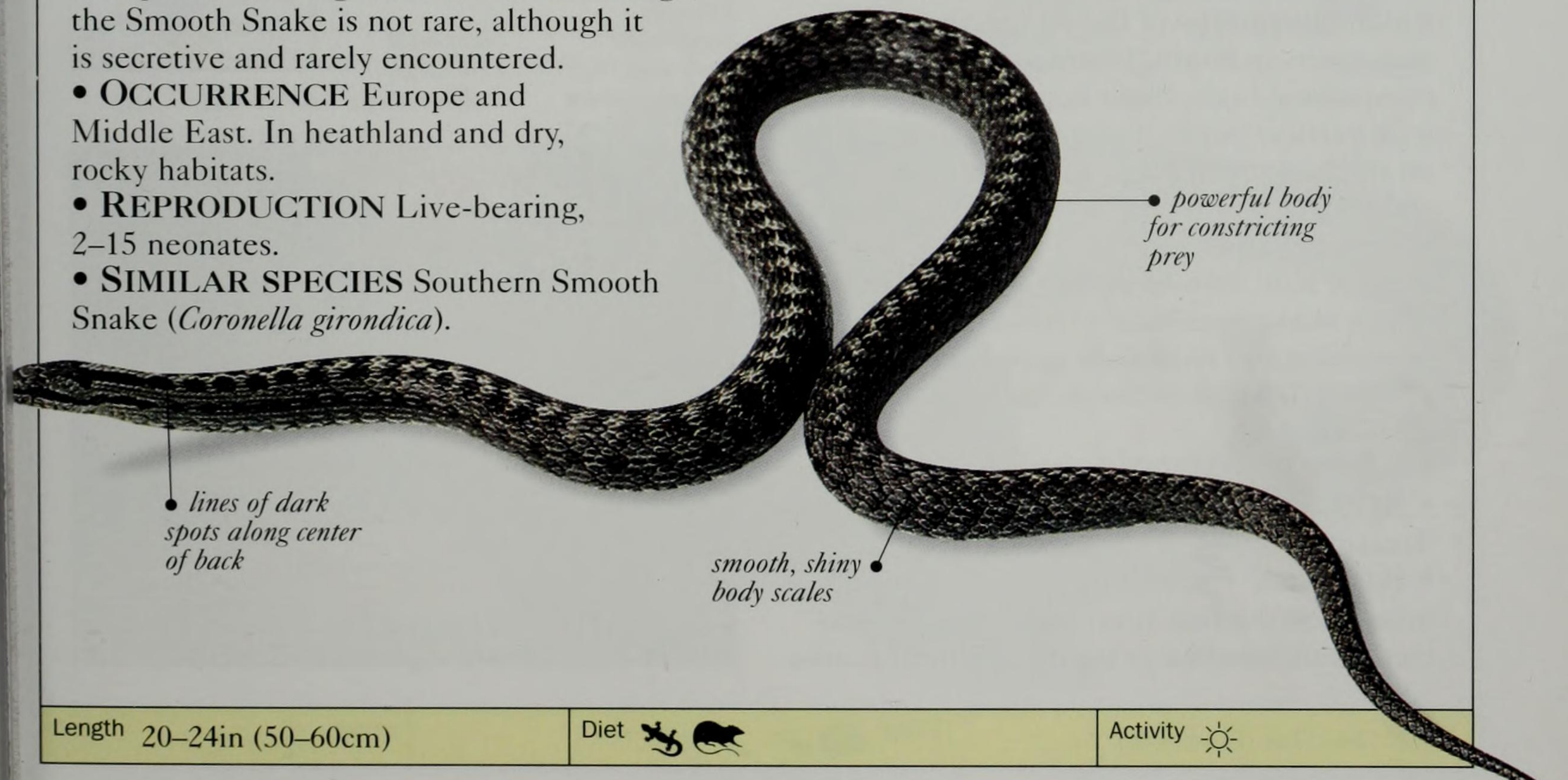
SMOOTH SNAKE

This is a gray, brown, or reddish snake with darker spots along the back, a stripe through the eyes, and darker pigment on the top of the head. The Smooth Snake preys on lizards, which it kills by constriction. It will also feed on the young of other snakes. It is the most protected reptile in Britain, where it is restricted to a small area of lowland heath in Dorset and Hampshire. Throughout the rest of its range, the Smooth Snake is not rare, although it is secretive and rarely encountered.

- **OCCURRENCE** Europe and Middle East. In heathland and dry, rocky habitats.
- **REPRODUCTION** Live-bearing, 2–15 neonates.
- **SIMILAR SPECIES** Southern Smooth Snake (*Coronella girondica*).



EUROPE, MIDDLE EAST



Length 20–24in (50–60cm)	Diet	Activity

Family COLUBRIDAE	Species *Dasypeltis scabra*	Status Common

COMMON RHOMBIC EGG-EATER



AFRICA

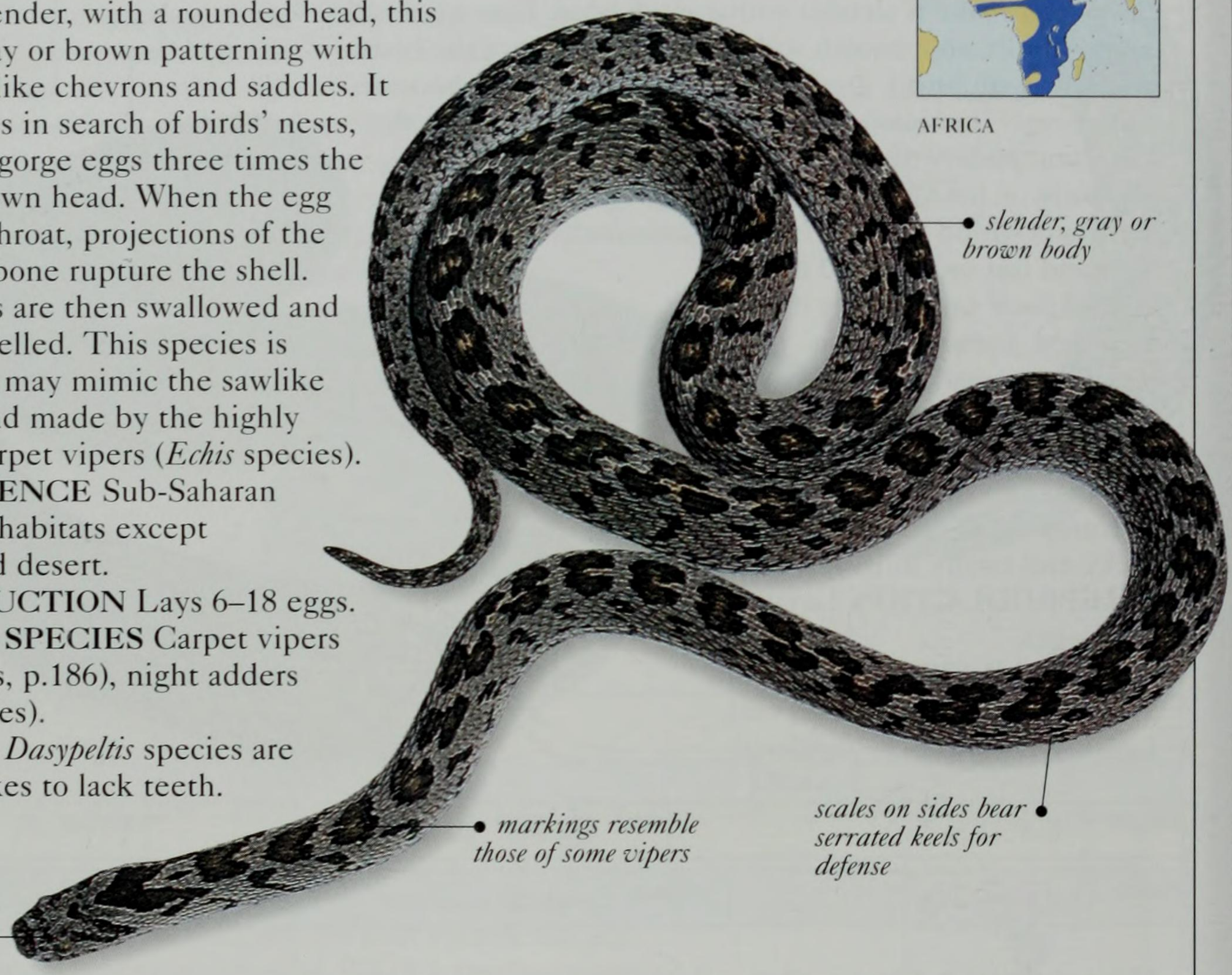
Short and slender, with a rounded head, this snake has gray or brown patterning with darker, viperlike chevrons and saddles. It climbs bushes in search of birds' nests, and it can engorge eggs three times the width of its own head. When the egg reaches the throat, projections of the snake's backbone rupture the shell. The contents are then swallowed and the shell expelled. This species is harmless but may mimic the sawlike warning sound made by the highly venomous carpet vipers (*Echis* species).

• **OCCURRENCE** Sub-Saharan Africa. In all habitats except rainforest and desert.

• **REPRODUCTION** Lays 6–18 eggs.

• **SIMILAR SPECIES** Carpet vipers (*Echis* species, p.186), night adders (*Causus* species).

• **REMARK** *Dasypeltis* species are the only snakes to lack teeth.



Length 2½–3ft (0.8–1m)	Diet ●	Activity ☾

Family COLUBRIDAE	Species *Dipsas indica*	Status Common

COMMON SLUG-EATING SNAKE



S. AMERICA

The Common Slug-eating Snake is the most widely distributed of the 30 species of *Dipsas* slug-eaters in South America. It has a laterally compressed body, blunt head, and large eyes with vertical pupils. Coloration is light brown on the back, with faint, darker ring markings and white spots on the sides, and an unmarked underside. Most other slug-eaters are boldly marked with dark blotches. The slender shape of this snake enables it to move over very fine vegetation and span wide gaps between twigs.

• **OCCURRENCE** South America. In tropical rainforest.

• **REPRODUCTION** Lays 2–6 eggs.

• **SIMILAR SPECIES** Brown Blunt-headed Treesnake (*Imantodes inornatus*).

• **REMARK** The species name *indica* is a misnomer: the first specimen described was incorrectly labelled as coming from Sri Lanka.



Length 24–31in (60–80cm)	Diet 🐌	Activity ☾

Family COLUBRIDAE	Species *Dispholidus typus*	Status Common

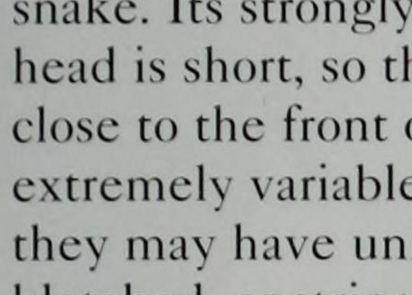
BOOMSLANG ☠

The slender-bodied Boomslang is a highly agile arboreal snake. Its strongly keeled scales are obliquely aligned. The head is short, so the large, rear-positioned fangs are relatively close to the front of the mouth. Boomslang coloration is extremely variable. Adults are bright green, brown, or black; they may have uniform coloration or may be spotted, blotched, or striped. Juveniles are gray or brown above, lighter on the sides, with white lips and undersides. The defensive posture of the Boomslang involves inflating its throat, exposing contrastingly colored interstitial skin, and laterally compressing the front of its body. The venom is highly toxic to humans and has caused several deaths.

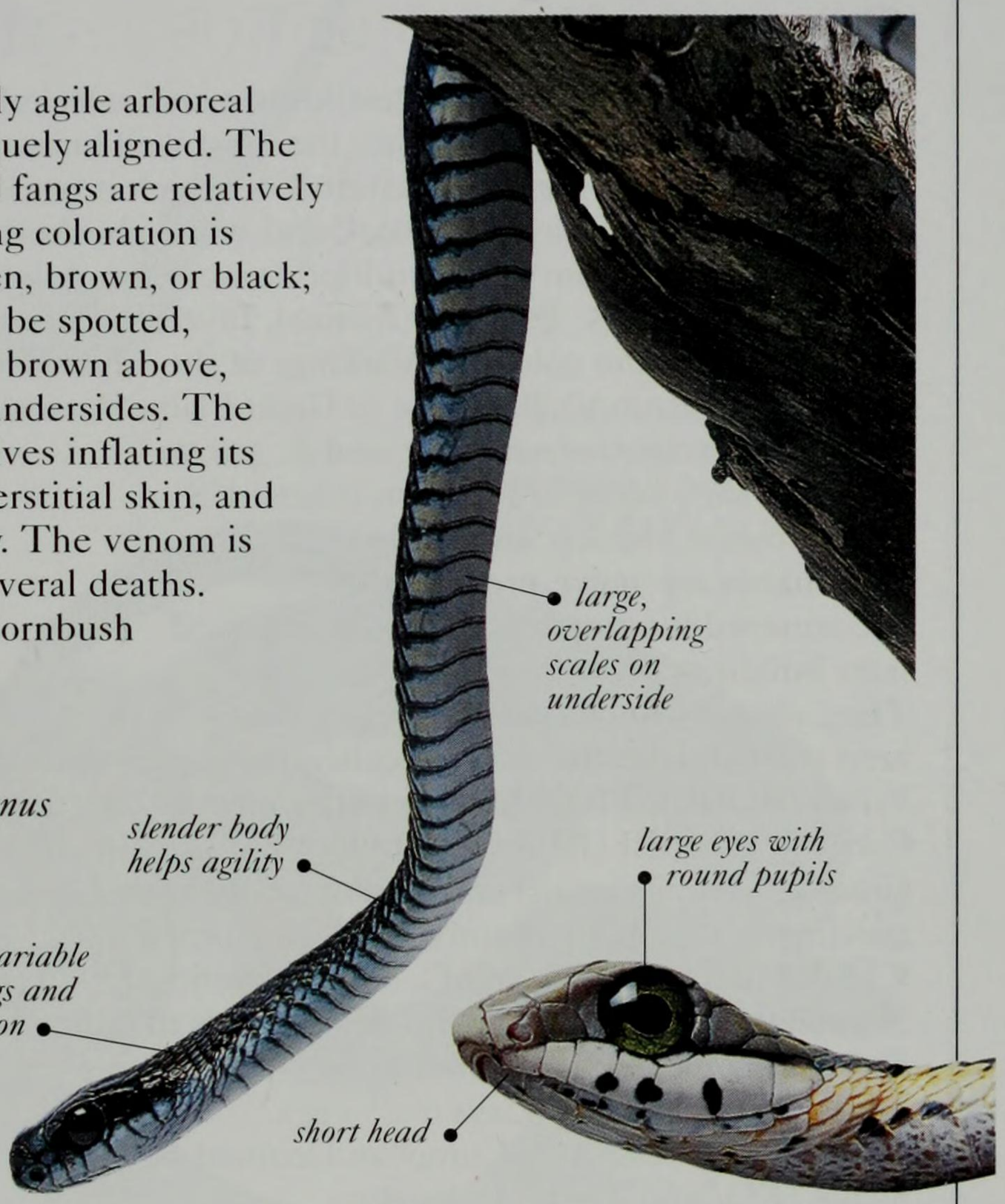
• **OCCURRENCE** Tropical Africa. In thornbush and savanna woodland.

• **REPRODUCTION** Lays 10–14 eggs.

• **SIMILAR SPECIES** Black treesnakes (*Thrasops* species), bushsnakes (*Philothamnus* species).



AFRICA



Length 5–6½ft (1.5–2m)	Diet	Activity

Family COLUBRIDAE	Species *Drymarchon corais*	Status Common

INDIGO SNAKE

Of the eight subspecies of Indigo Snake, only the protected Florida subspecies (shown here), with its glossy blue-black coloration and red chin and throat, warrants the common name. The Texan and Latin American subspecies, sometimes called Cribos, are yellow, red, brown, or black, often with a contrasting yellow or black tail. The prey of the Indigo Snake includes a wide variety of vertebrates, such as venomous rattlesnakes and lanceheads, and the Common Boa.

• **OCCURRENCE** S. North America to C. South America. In most habitats except desert.

• **REPRODUCTION** Lays 4–11 eggs.



N., C., & S. AMERICA

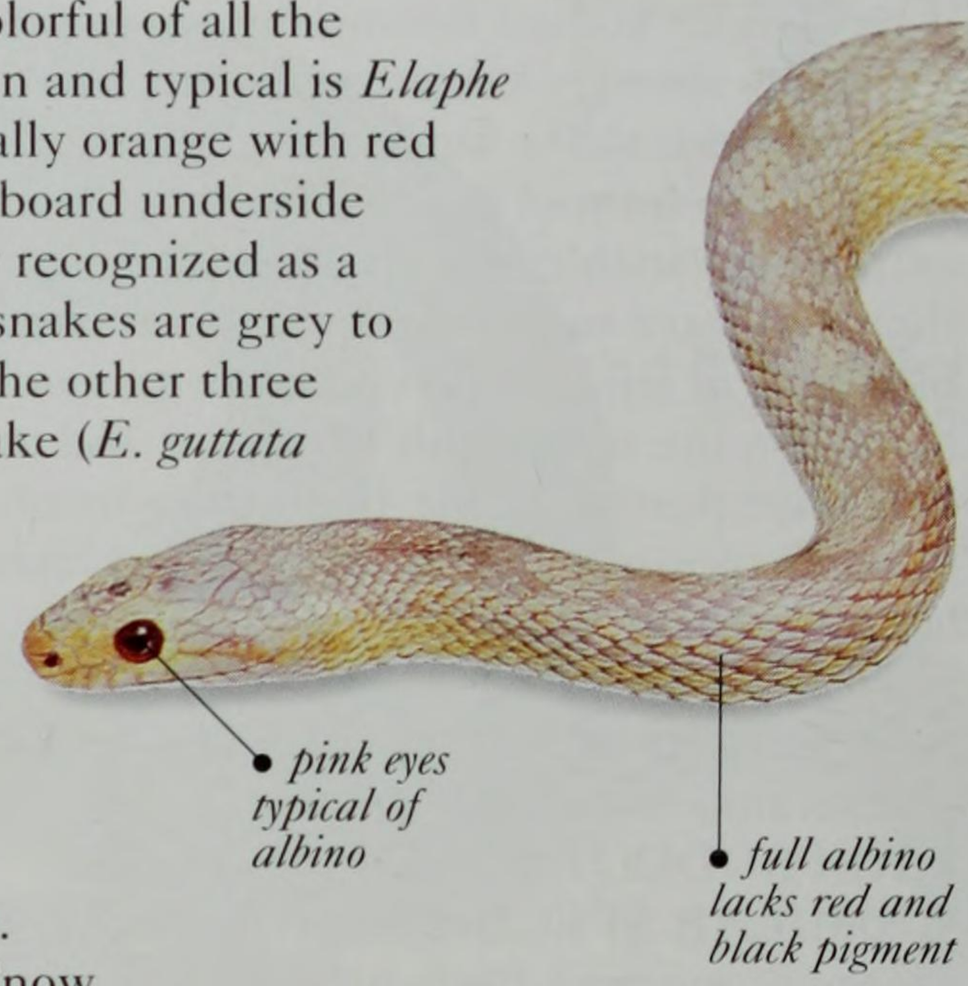


Length 7–9½ft (2.1–2.9m)	Diet	Activity

Family COLUBRIDAE	Species *Elaphe guttata*	Status Common

CORNSNAKE

The Cornsnake is one of the best-known and most colorful of all the ratsnakes. Of the four subspecies, the most well known and typical is *Elaphe guttata guttata* from the southeastern US, which is usually orange with red saddles and sometimes has a black-and-white checkerboard underside (paler specimens from southern Florida were formerly recognized as a separate subspecies, *E. guttata rosacea*). Juvenile Cornsnakes are grey to brown and lack the colourful markings of the adult. The other three subspecies – Emory's Ratsnake or Great Plains Ratsnake (*E. guttata emoryi*), *E. guttata intermontana*, and *E. guttata meahllmorum* – occur in southern central US and northeast Mexico, and are basically gray. Cornsnakes are active predators, often encountered hunting small mammals around farm buildings or crossing roads at night. They are popular pets and several captive-bred color variants, known as "cultivars," are available. Variants include albinos, which are commonly called Snow Corns, and partial albinos that lack either black pigment (amelanistic specimens) or red or orange pigment (anerythristic specimens, commonly known as Black Corns).



• **OCCURRENCE** E. and C. North America. In a wide variety of habitats, from dry woodland and swamps to railway embankments and farmland.

• **REPRODUCTION** Lays 6–25 eggs.

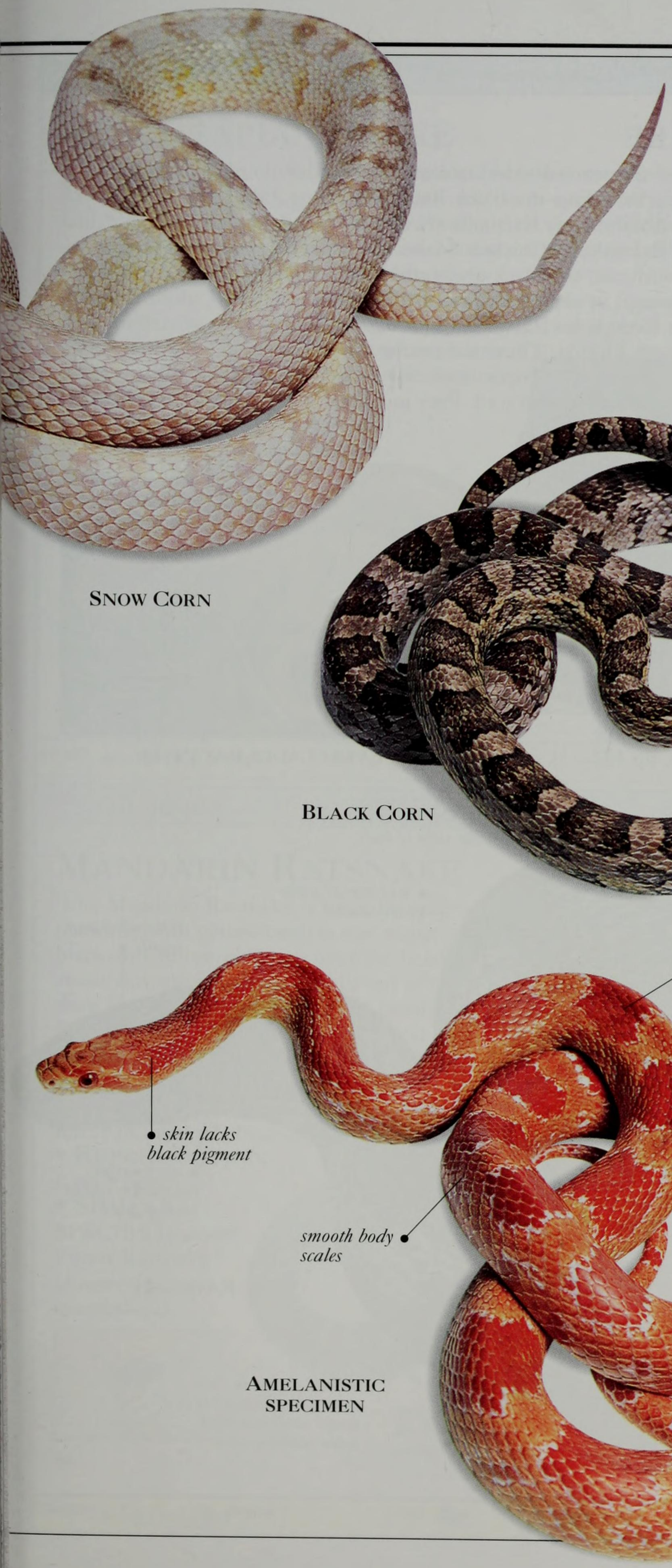
• **SIMILAR SPECIES** European Leopard Snake (*E. situla*), Green Ratsnake (*E. triaspis*).



TYPICAL CORNSNAKE

N. AMERICA

Length 3–6ft (1–1.8m)	Diet	Activity



SNOW CORN

body arched in cross section, enabling snake to wedge itself into bark when scaling tree trunks

BLACK CORN

skin lacks red or orange pigment, so snake is gray

red saddles edged with white

skin lacks black pigment

smooth body scales

AMELANISTIC SPECIMEN

Family COLUBRIDAE	Species *Elaphe obsoleta*	Status Common

COMMON RATSNAKE



N. AMERICA

This extremely variably patterned species is divided into at least five distinctly different subspecies, including: the Black Ratsnake (*Elaphe obsoleta obsoleta*) in the north; the Gray Ratsnake (*E. obsoleta spiloides*) in the south; the Yellow Ratsnake or Chicken Snake (*E. obsoleta quadrivittata*) in the southeast; the black-and-yellow Texas Ratsnake (*E. obsoleta lindheimeri*) in central and eastern Texas and Louisiana; and the Orange or Everglades Ratsnake (*E. obsoleta rossalleni*), which is confined to south Florida. These are among the largest snakes in the US and have pugnacious dispositions. All ratsnakes are expert climbers and they also swim well. Prey includes large rats and squirrels, which are killed by constriction. Juvenile ratsnakes are usually very different in appearance from adults, the hatchlings of Yellow Ratsnakes bearing a closer resemblance to miniature Gray Ratsnakes.

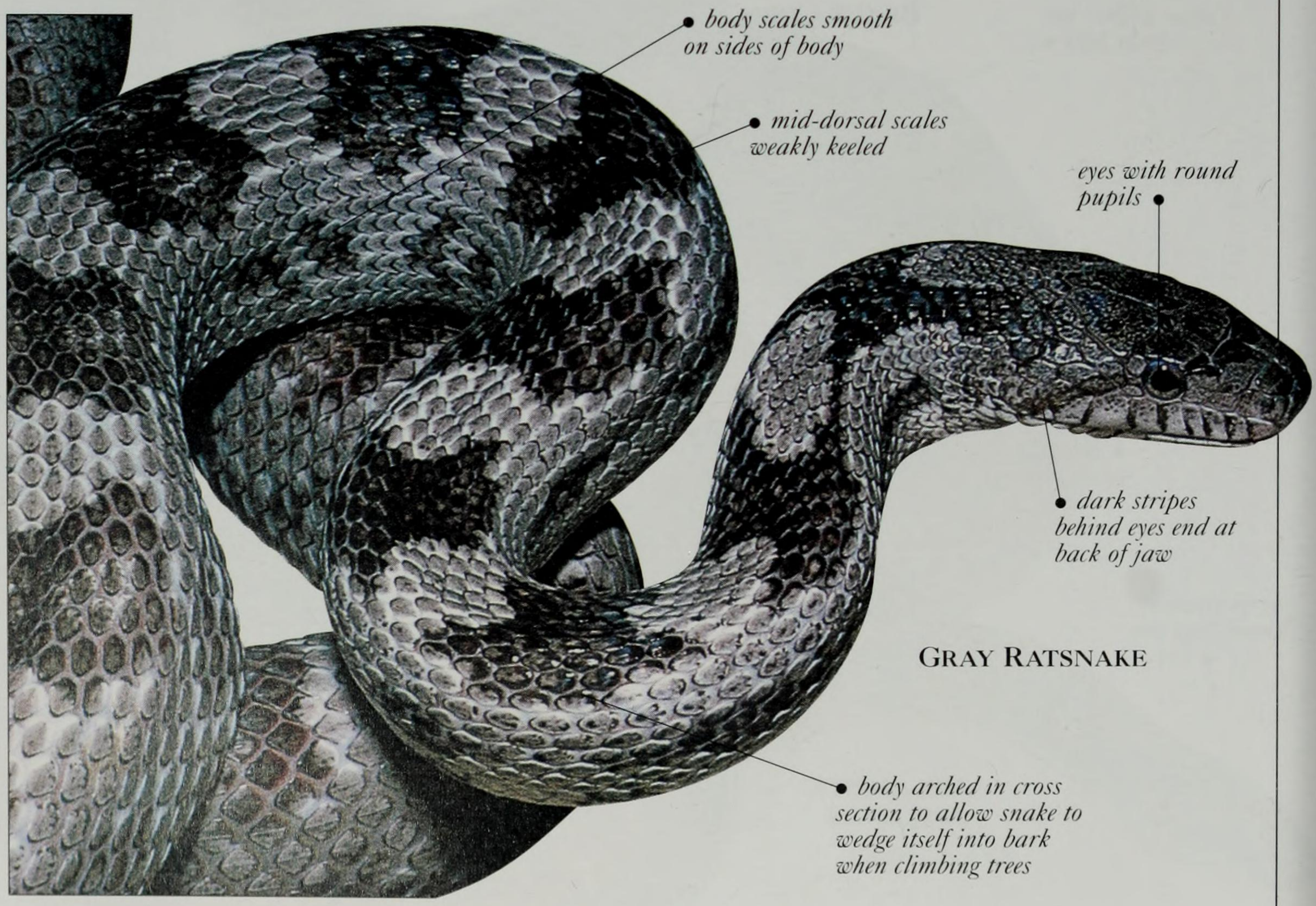
• **OCCURRENCE** E. North America. Black and Gray Ratsnakes occur mainly in deciduous forest, but also in farmland; Yellow and Orange Ratsnakes inhabit lowland pinelands, swamps, and mangrove hammocks; Texas Ratsnakes are found in drier habitats.

• **REPRODUCTION** Lays 5–30 eggs.

• **SIMILAR SPECIES** Baird's Ratsnake (*E. bairdi*), Cornsnake (*E. guttata*, pp.132–33).



ORANGE OR EVERGLADES RATSNAKE



GRAY RATSNAKE

Length 3–8ft (1–2.5m)	Diet	Activity

Family COLUBRIDAE	Species *Elaphe longissima*	Status Common

AESCULAPIAN SNAKE

This fairly uniform olive-brown or speckled ratsnake is named after Aesculapius, the Greek god of medicine, who bore a staff entwined with a snake – the symbol of medicine today. Aesculapian Snakes are large constrictors that occur in arid, Mediterranean-type habitats, often hunting rats among the boulders of old drystone walls. Juveniles (shown here), which feed on lizards, are usually lighter with rows of dark spots. Like juvenile Grass Snakes (*Natrix natrix*, p.148), juvenile Aesculapian Snakes have a yellow collar.

• **OCCURRENCE** S. Europe and W. Asia. In dry lowland scrub and upland rocky slopes.

• **REPRODUCTION** Lays 5–12 eggs.

• **SIMILAR SPECIES** Ladder Snake (*Elaphe scalaris*).

• **REMARK** The Romans, who also worshipped Aesculapius, transported these snakes throughout the Empire in earthenware containers and introduced them into their temples, considering them to be sacred.



EUROPE, ASIA



Length 4½–7ft (1.4–2.2m)	Diet	Activity

Family COLUBRIDAE	Species *Elaphe mandarina*	Status Rare

MANDARIN RATSNAKE

The Mandarin Ratsnake is basically gray, with black diamond markings with yellow centers and edges on the back, and black-and-yellow chevrons over the head. Little is known about this species, but it is believed to hunt infant mice in their burrows. Although the main habitat of the Mandarin Ratsnake appears to be montane forest containing open areas and rocks, it is occasionally encountered under rocky scree and in cavities under large stones.

• **OCCURRENCE** E. Asia. In montane forest and rocky habitats.

• **REPRODUCTION** Lays 8 eggs.

• **SIMILAR SPECIES** Japanese Forest Ratsnake (*Elaphe conspicillata*).



ASIA





Length 3–5ft (1–1.6m)	Diet	Activity

Family COLUBRIDAE	Species *Elaphe taeniura*	Status Common

BEAUTY RATSNAKE



ASIA

This species is olive-brown at the front, with four large black spots and two long yellow stripes, giving way to a broad yellow vertebral stripe and white-barred black sides. The olive-brown head has a black stripe behind the eyes and white lips. In the Taiwan Beauty Ratsnake (*Elaphe taeniura friesi*) some of the markings form bow-tie patterns over the back. The Malaysian Cave Racer (*E. taeniura ridleyi*) is light gray, darker at the rear, with a yellow stripe and a gray, dark-striped head.

• **OCCURRENCE** S.E. Asia and E. Asia. From rainforest to cultivated habitats.

• **REPRODUCTION** Lays 5–25 eggs.

• **SIMILAR SPECIES** Indonesian Ratsnake (*E. subradiata*), Radiated Ratsnake (*E. radiata*).

olive-brown head with black stripes

TAIWAN BEAUTY RATSNAKE

pale or reduced patterning in cave-dwelling form

dark body markings

gray body with yellow stripe on back

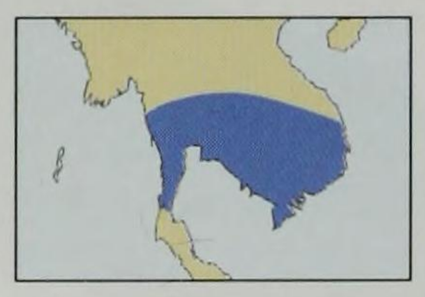
yellow stripe running along tail

MALAYSIAN CAVE RACER

Length 4–8ft (1.3–2.5m)	Diet	Activity

Family COLUBRIDAE	Species *Erpeton tenticulatum*	Status Locally common

TENTACLED SNAKE



ASIA

No other snake in the world can be confused with this drab brown aquatic species with its twin-tentacled, angular head. The scales of the body are strongly keeled; those on the underside are small, greatly reducing the snake's movement on land. The tentacles are used to lure fish and shrimp, which are killed swiftly by the venomous bite. Tentacled Snakes can remain submerged for six minutes between breaths. They spend the dry season buried in mud.

• **OCCURRENCE** S.E. Asia. In slow-moving, acidic, freshwater.

• **REPRODUCTION** Live-bearing, 5–13 neonates.

dull brown body with strongly keeled scales

tentacles on snout for locating prey

Length 2–3ft (0.7–1m)	Diet	Activity Unknown

Family COLUBRIDAE	Species *Fordonia leucobalia*	Status Common

CRAB-EATING WATER SNAKE

This is a variably colored species, with yellow, orange, black, and mottled specimens. It has smooth body scales and a rounded head with small eyes and a reduced lower jaw. Also known as the White-bellied Mangrove Snake, it inhabits the zone where land and sea overlap. It shares the burrows of crabs, which are its main prey.

• **OCCURRENCE** S.E. Asia and Australasia. In mangrove swamps and estuarine mudflats.

• **REPRODUCTION** Live-bearing, 10–15 neonates.

• **SIMILAR SPECIES** Water snakes (*Enhydris* and *Myron* species).



ASIA, AUSTRALASIA



Length 24–35in (60–90cm)	Diet	Activity

Family COLUBRIDAE	Species *Gonyosoma oxycephala*	Status Common

RED-TAILED RACER

A fast-moving, alert, arboreal species, the Red-tailed Racer is usually vivid, shiny green, with a long, slender, red, brown, or gray tail; some specimens may be yellow or brown. A dark line passes through the large eyes, separating the green crown of the head from the yellow-green lips. When alarmed, this snake will inflate a secondary air sac in its throat, causing the front of the body to become enlarged and stiff, and exposing dark skin between the scales. It will gape, showing the black inside of the mouth, and strike toward its aggressor. Prey, which includes bats captured on the wing, will be constricted in the snake's muscular coils.

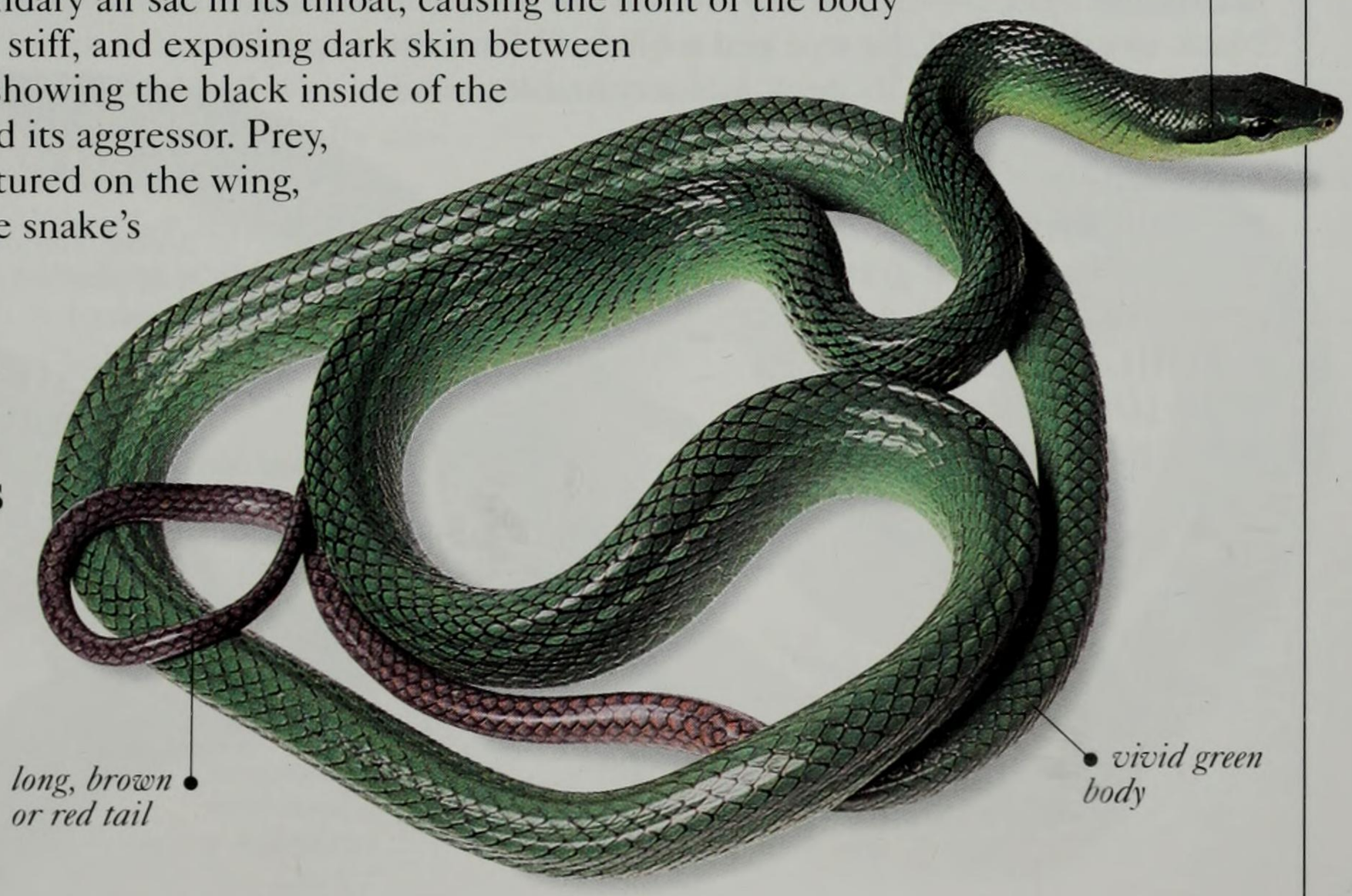
• **OCCURRENCE** S.E. Asia. In rainforest.

• **REPRODUCTION** Lays 5–12 eggs.

• **SIMILAR SPECIES** Green Tree Racer (*Elaphe prasina*).



ASIA



Length 5–8ft (1.6–2.4m)	Diet	Activity

Family COLUBRIDAE	Species *Heterodon nasicus*	Status Common

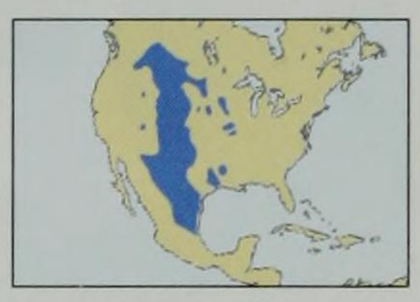
WESTERN HOGNOSE SNAKE

The upturned snout of the Western Hognose Snake separates this species from most other North American snakes. The body is stout and pale gray, with several rows of square brown or gray blotches along the back. The large black blotches on the underside are absent on other hognose snakes.

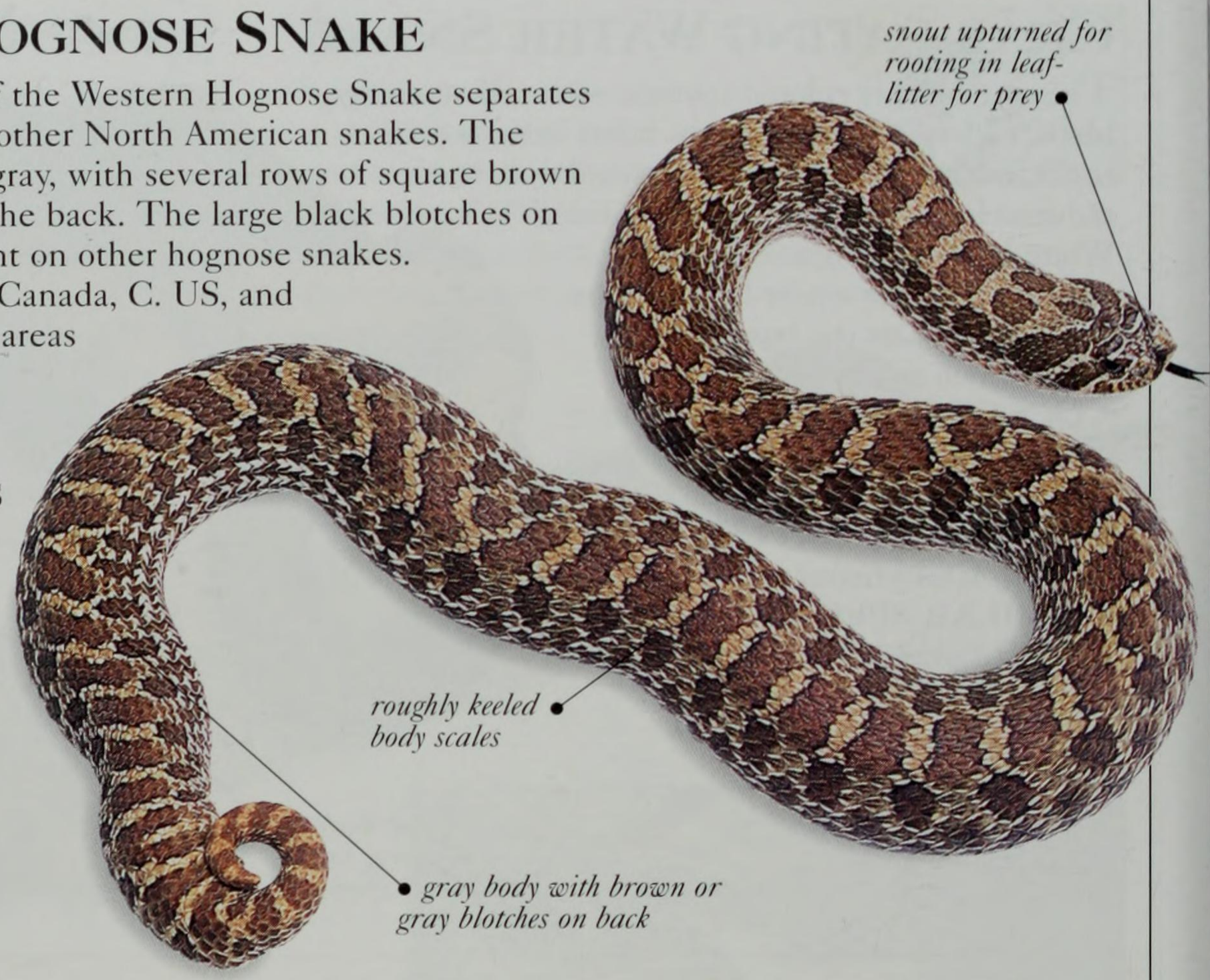
• **OCCURRENCE** S. Canada, C. US, and N.E. Mexico. In sandy areas and prairies.

• **REPRODUCTION** Lays 4–23 eggs.

• **SIMILAR SPECIES** Eastern Hognose (*Heterodon platyrhinos*), Southern Hognose (*H. simus*).



N. AMERICA

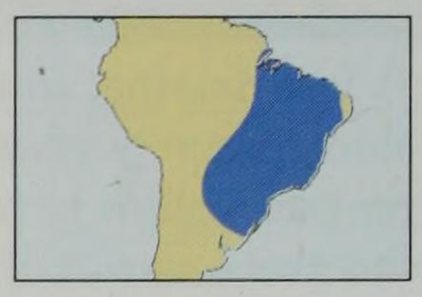


Length 16–31in (40–80cm)	Diet	Activity

Family COLUBRIDAE	Species *Hydrodynastes gigas*	Status Locally common

FALSE WATER COBRA ☠

This semiaquatic species is easily recognizable because of its large size, smooth scales, and stout body. The background color is yellow-brown, with dark brown blotches edged in black or very dark brown. There are occasional light brown patches toward the tail. The head bears a broad black streak behind the eye and a black "V" on the nape. This species spreads its neck into a cobralike hood, but it is not a true cobra.

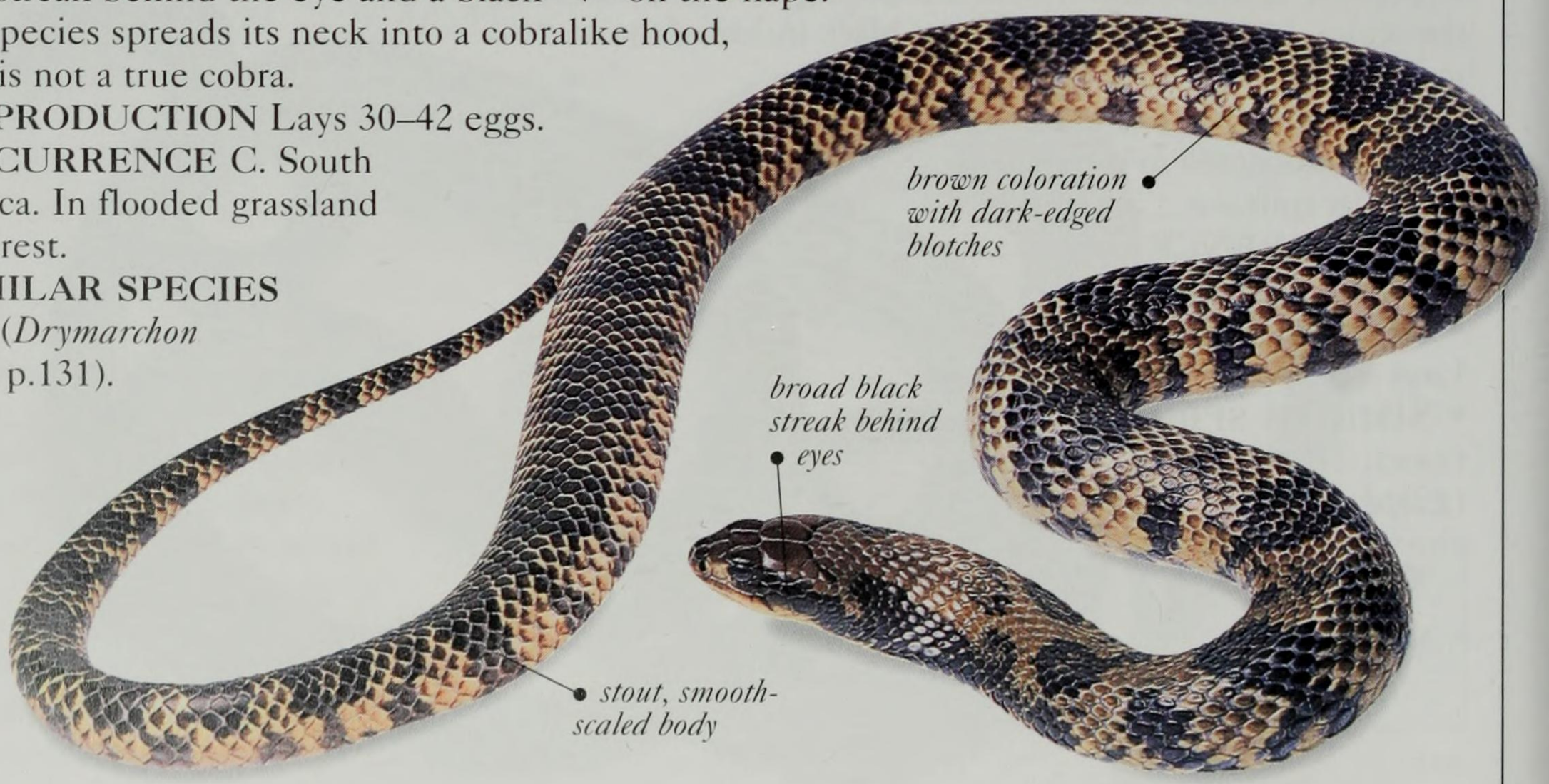


S. AMERICA

• **REPRODUCTION** Lays 30–42 eggs.

• **OCCURRENCE** C. South America. In flooded grassland and forest.

• **SIMILAR SPECIES** Cribo (*Drymarchon corais*, p.131).



Length 5–6½ft (1.5–2m)	Diet	Activity

Family COLUBRIDAE	Species *Imantodes cenchoa*	Status Locally common

BLUNT-HEADED TREESNAKE



C. & S. AMERICA

The body of the Blunt-headed Treesnake is very light and slender, enabling this species to venture onto the most delicate vegetation in order to capture sleeping lizards. The blunt head is surprisingly large in comparison to the body, and the eyes are bulbous. The scales along the back are enlarged (they are three to four times the size of the scales along the sides) and act as a cantilever, allowing the treesnake to bridge wide gaps with ease. This snake hunts its sleeping prey using its eyes and its chemosensory tongue.

• **OCCURRENCE** Central and South America. In tropical dry and wet forests.

• **REPRODUCTION** Lays 1–3 eggs.

• **SIMILAR SPECIES** Central American Treesnake (*Imantodes gemmistratus*).



Length 3–4ft (1–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Lamprophis fuliginosus*	Status Common

COMMON HOUSESNAKE



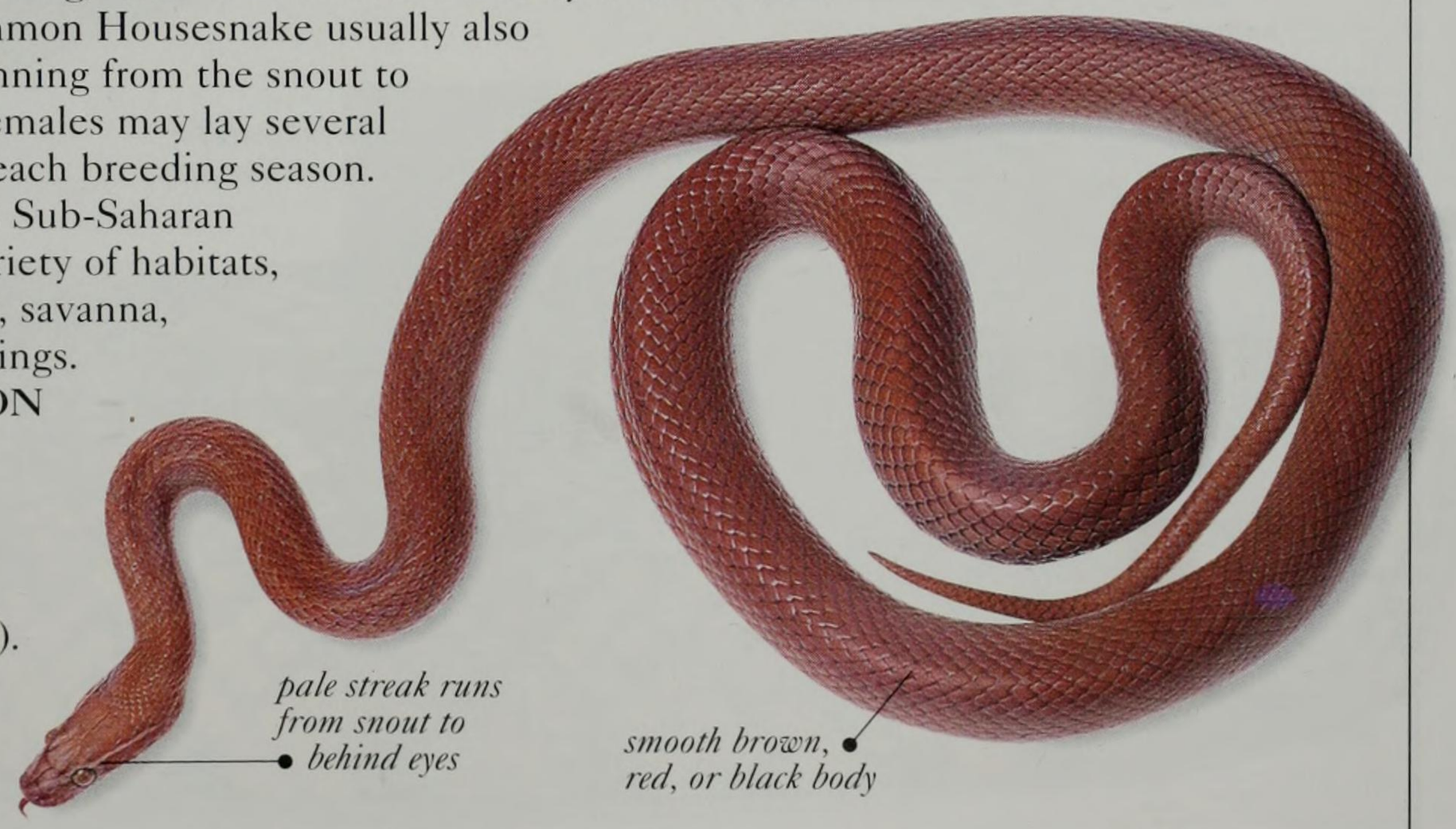
AFRICA

Probably the most ubiquitous snake in sub-Saharan Africa, the harmless Common Housesnake is highly variable in coloration, ranging from almost black to dark brown, sandy brown, or red. This species may be confused with other African housesnakes. All possess smooth scales and a long, slender head with small eyes and vertical pupils, but the Common Housesnake usually also has a pale streak running from the snout to behind the eyes. Females may lay several clutches of eggs in each breeding season.

• **OCCURRENCE** Sub-Saharan Africa. In a wide variety of habitats, including woodland, savanna, farmland, and buildings.

• **REPRODUCTION** Lays 8–16 eggs.

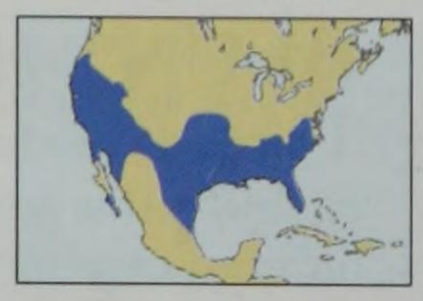
• **SIMILAR SPECIES** Lined Housesnake (*Lamprophis lineatus*).



Length 3–5ft (0.9–1.5m)	Diet	Activity

Family COLUBRIDAE	Species *Lampropeltis getula*	Status Common

COMMON KINGSNAKE



N. AMERICA

One of the best-known North American snakes, the Common Kingsnake is also one of the most variably patterned. There are between 7 and 10 subspecies. The Eastern Kingsnake (*Lampropeltis getula getula*) is also known as the Chain Kingsnake because of its body pattern of black with overlying yellow chain markings. The Desert Kingsnake (*L. getula splendida*) is similar but has more yellow speckling on the sides and a totally black mask over the head. Each black scale of the Speckled Kingsnake (*L. getula holbrooki*) has a yellow center, while the Black Kingsnake (*L. getula niger*) and the Mexican Black Kingsnake (*L. getula nigritus*) are almost entirely black. The Florida Kingsnake (*L. getula floridana*) may be brown with yellow markings, or the reverse; while the Californian Kingsnake (*L. getula californiae*) is the most variable subspecies, with both banded and striped specimens being produced from the same clutch of eggs. Primarily terrestrial, kingsnakes are powerful constrictors. They prey on small mammals, but also eat other snakes – including venomous ones such as rattlesnakes (*Crotalus* and *Sistrurus* species), to whose bites they are immune.

• **OCCURRENCE** North America. In a wide variety of habitats, including woodland, farmland, and grassland.

• **REPRODUCTION** Lays 3–24 eggs.

• **SIMILAR SPECIES** Pinesnakes (*Pituophis* species, p.149).

light vertebral stripe on brown background



CALIFORNIAN KINGSNAKE (STRIPED)

numerous yellow speckles on black background

series of black spots down centre of back

powerful body for constricting prey



Length 3–6ft (0.9–1.8m)	Diet	Activity



brown-and-yellow netlike body markings

large, smooth body scales

FLORIDA KINGSNAKE

distinctive yellow bands from head to tail

CALIFORNIAN KINGSNAKE (BANDED)

saddles may be black or brown

black mask marking over head and neck

eyes have round pupils

glossy black body with no markings



DESERT KINGSNAKE

MEXICAN BLACK KINGSNAKE

Family COLUBRIDAE	Species *Lampropeltis triangulum*	Status Common

AMERICAN MILKSNAKE



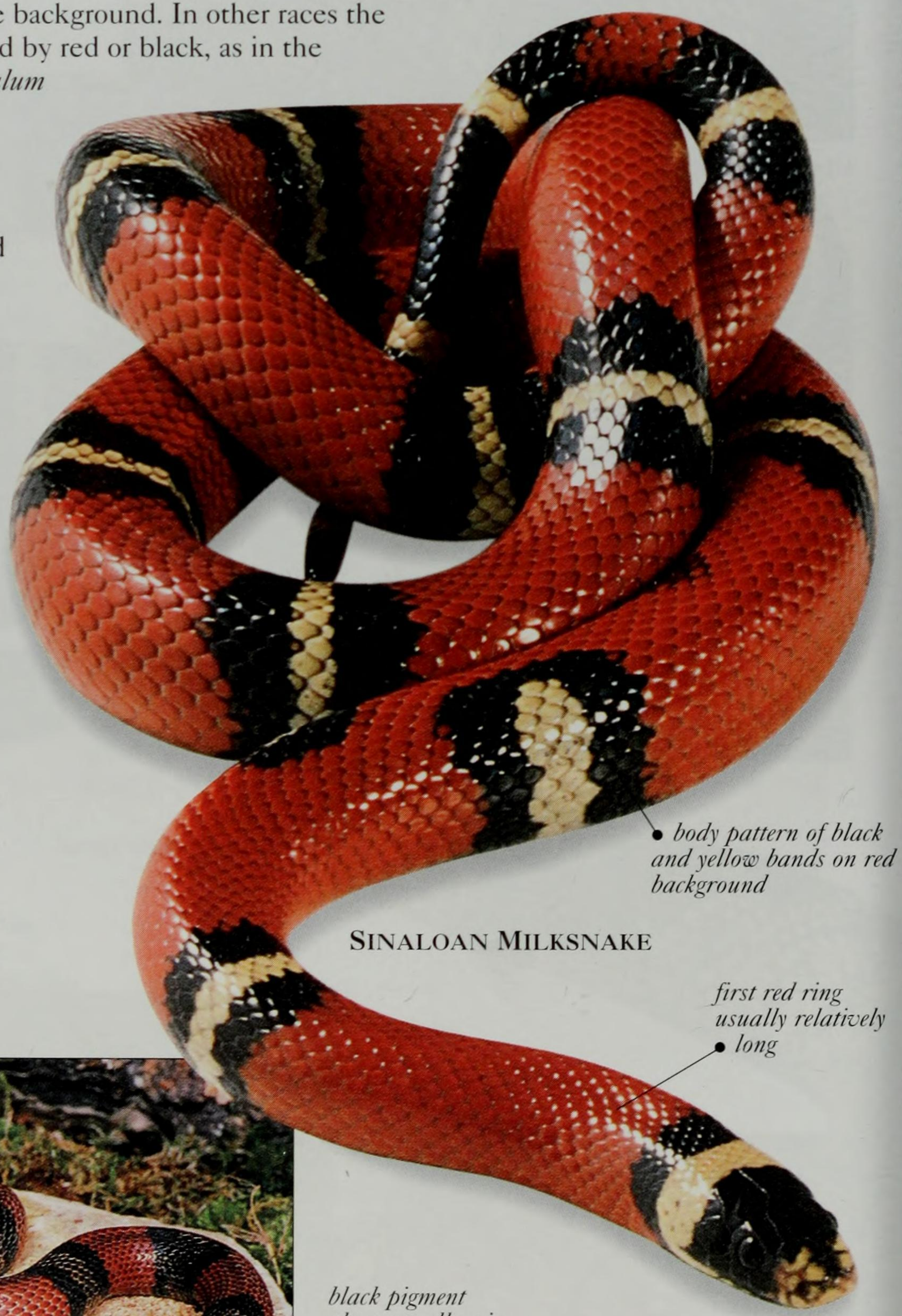
N., C., & S. AMERICA

One of the most widely distributed of all terrestrial snakes, the American Milksnake is found from southeastern Canada to Colombia and Ecuador. There are 25 subspecies, varying in size from the diminutive Scarlet Kingsnake (*Lampropeltis triangulum elapsoides*), which grows to 20in (50cm) long, to the 6½ft (2m) Ecuadorian Milksnake (*L. triangulum micropholis*). Most subspecies have characteristic red, black, and yellow (or white) banding, but in some races the red markings may be reduced to black-edged saddles on a pale background. In other races the yellow pigment may be obscured by red or black, as in the Honduran Milksnake (*L. triangulum hondurensis*). There is also an entirely black subspecies. The Central Plains Milksnake (*L. triangulum gentilis*) is paler than most other milksnakes, and the Eastern Milksnake (*L. triangulum triangulum*) is unusual in that it has red-brown saddle markings. The Mexican Milksnake (*L. triangulum annulata*) has red rings uninterrupted by black, and in the Sinaloan Milksnake (*L. triangulum sinaloae)* the first red ring is usually relatively long. Milksnakes are semiburrowing.

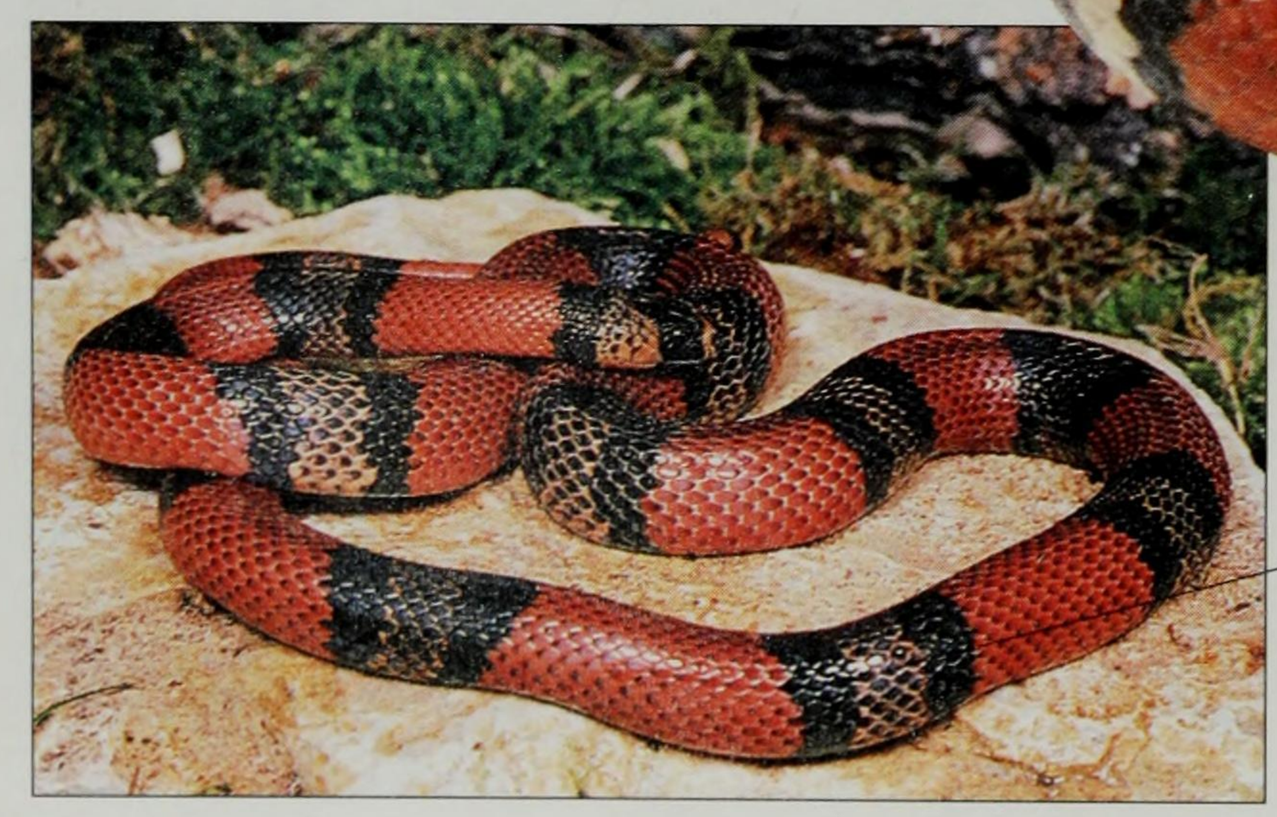
• **OCCURRENCE** North and Central America and N.W. South America. In a variety of habitats except true desert.

• **REPRODUCTION** Lays 5–16 eggs.

• **SIMILAR SPECIES** Arizona Kingsnake (*L. pyromelana*), coralsnakes (*Micrurus* species, pp.163–64).



SINALOAN MILKSNAKE



HONDURAN MILKSNAKE

Length 2–6½ft (0.5–2m)	Diet	Activity

MEXICAN MILKSNAKE

dark body with red rings and yellow cross-bands

no red markings on tail

pale cross-bands in white or light gray and black

CENTRAL PLAINS MILKSNAKE

mainly red head

well-defined cross-bands on vivid red background

cross-bands more frequent on tail

SCARLET KINGSNAKE

Family COLUBRIDAE	Species *Langaha madagascariensis*	Status Locally common

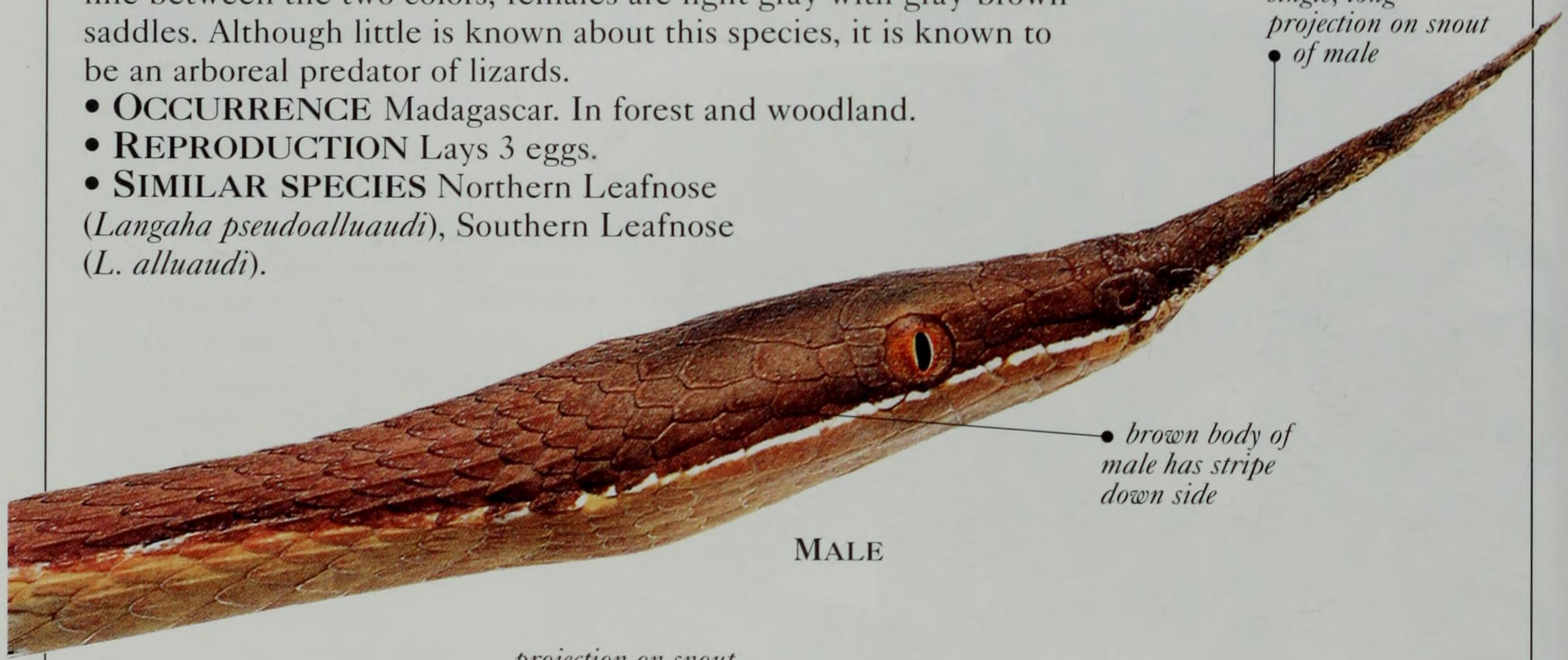
MADAGASCAN LEAFNOSE VINESNAKE



MADAGASCAR

The Madagascan Leafnose Vinesnake is one of the strangest-looking snakes in the world. It is long and slender, with strongly keeled scales. Both male and female have unusual projections on the snout. The male has a soft spike on the snout tip; in the female, the appendage is more elaborate and resembles a laterally compressed flower bud or fir cone. These adornments add to the vinesnake's cryptic camouflage, so that when motionless it is invisible to both predators and prey. Males and females also differ in their coloration. The males are brown above and yellow below, with a distinct line between the two colors; females are light gray with gray-brown saddles. Although little is known about this species, it is known to be an arboreal predator of lizards.

- **OCCURRENCE** Madagascar. In forest and woodland.
- **REPRODUCTION** Lays 3 eggs.
- **SIMILAR SPECIES** Northern Leafnose (*Langaha pseudoalluaudi*), Southern Leafnose (*L. alluaudi*).



MALE



FEMALE

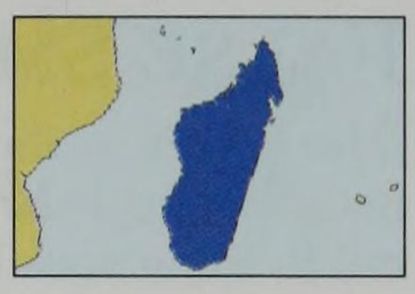


MALE ON BRANCH

Length 28–35in (70–90cm)	Diet	Activity

Family COLUBRIDAE	Species *Leioheterodon madagascariensis*	Status Common

GIANT MALAGASY HOGNOSE SNAKE ☠

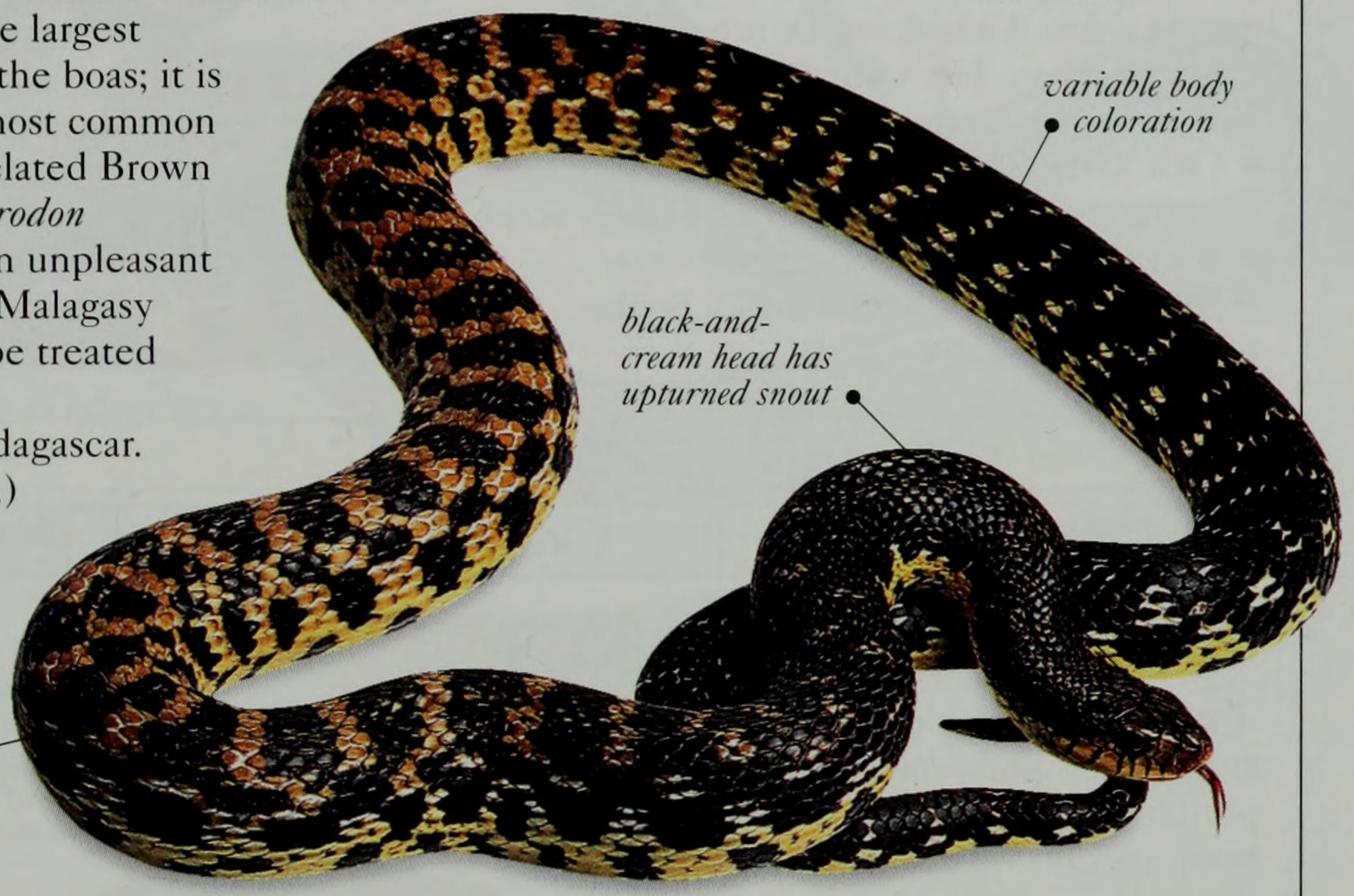


MADAGASCAR

The bold pattern of black, flecked with yellow, and dark brown saddles on a light brown background makes this an imposing species. Its large head is black above and cream below, and it has an upturned snout for excavating in leaf-litter and soft earth in search of prey. This is the largest Madagascan snake after the boas; it is also one of the island's most common snakes. Bites from the related Brown Hognose Snake (*Leioheterodon modestus*) have resulted in unpleasant symptoms, so the Giant Malagasy Hognose Snake should be treated with respect.

• **OCCURRENCE** Madagascar. (Introduced to Comoros.) In forest.

• **REPRODUCTION** Lays 5–13 eggs.



Length 3–5ft (1–1.5m)	Diet	Activity

Family COLUBRIDAE	Species *Leptophis diplotropis*	Status Common

PACIFIC COAST PARROT SNAKE ☠



N. AMERICA

Bright green and yellow in color, with the scales of the body often edged with black, the Pacific Coast Parrot Snake blends into its woodland habitat when stationary. This species is an extremely alert predator that may be seen hunting for lizards or frogs in vegetation along riverbanks. When threatened, it rears up and inflates the curved front part of the body, then gapes widely to expose the blue-black inside of the mouth before launching aggressive strikes toward the perceived enemy. Several painful bites are on record from parrot snakes.

• **OCCURRENCE** W. Mexico. In lowland, coastal forest.

• **REPRODUCTION** Lays 1–3 eggs.

• **SIMILAR SPECIES** Common Parrot Snake (*Leptophis ahaetulla*).

• **REMARK** This is the most northern of seven species of parrot snake.



Length 3–5ft (1–1.5m)	Diet	Activity

Family COLUBRIDAE	Species *Macroprotodon cucullatus*	Status Common

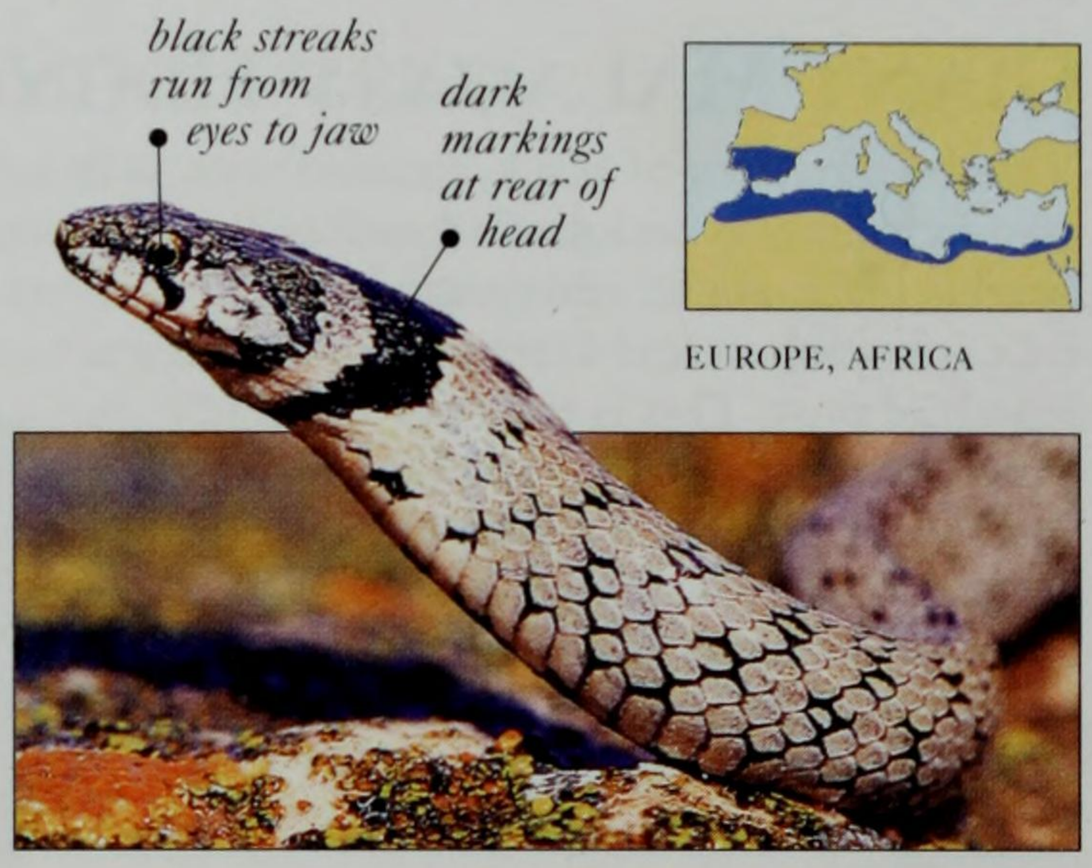
FALSE SMOOTH SNAKE

Also known as the Hooded or Cowl Snake because of the dark head markings, this mildly venomous lizard-eater is light gray to brown above, with faint black markings on the sides. A black streak runs from each eye to the jaw. The underside is pink, yellow, or checkerboard black and white.

• **OCCURRENCE** S.W. Europe and N. Africa. In open woodland and sandy scrub.

• **REPRODUCTION** Lays 5–7 eggs.

• **SIMILAR SPECIES** Smooth Snake (*Coronella austriaca*, p.129).



EUROPE, AFRICA

Length 24–25½in (60–65cm)	Diet	Activity ◑ ☾

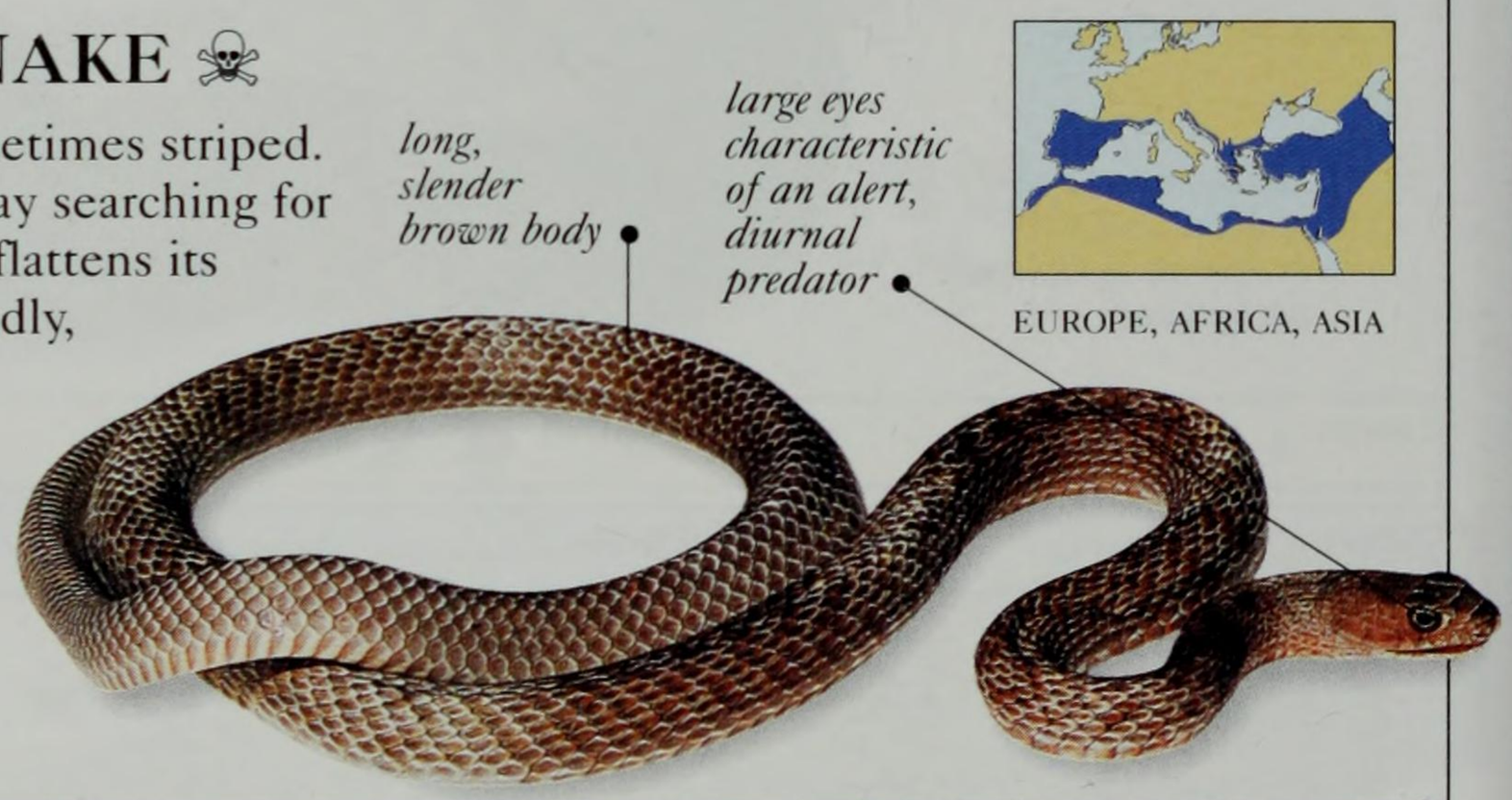
Family COLUBRIDAE	Species *Malpolon monspessulanus*	Status Common

MONTPELLIER SNAKE ☠

This large species is brown, sometimes striped. It moves around rapidly in the day searching for prey. When cornered, the snake flattens its body, spreads its neck, hisses loudly, and strikes quickly.

• **OCCURRENCE** S. Europe, N. Africa, and S.W. Asia. In rocky scrub and arid semidesert.

• **REPRODUCTION** Lays 4–20 eggs.



EUROPE, AFRICA, ASIA

Length 5–6½ft (1.5–2m)	Diet	Activity ☼

Family COLUBRIDAE	Species *Masticophis flagellum*	Status Common

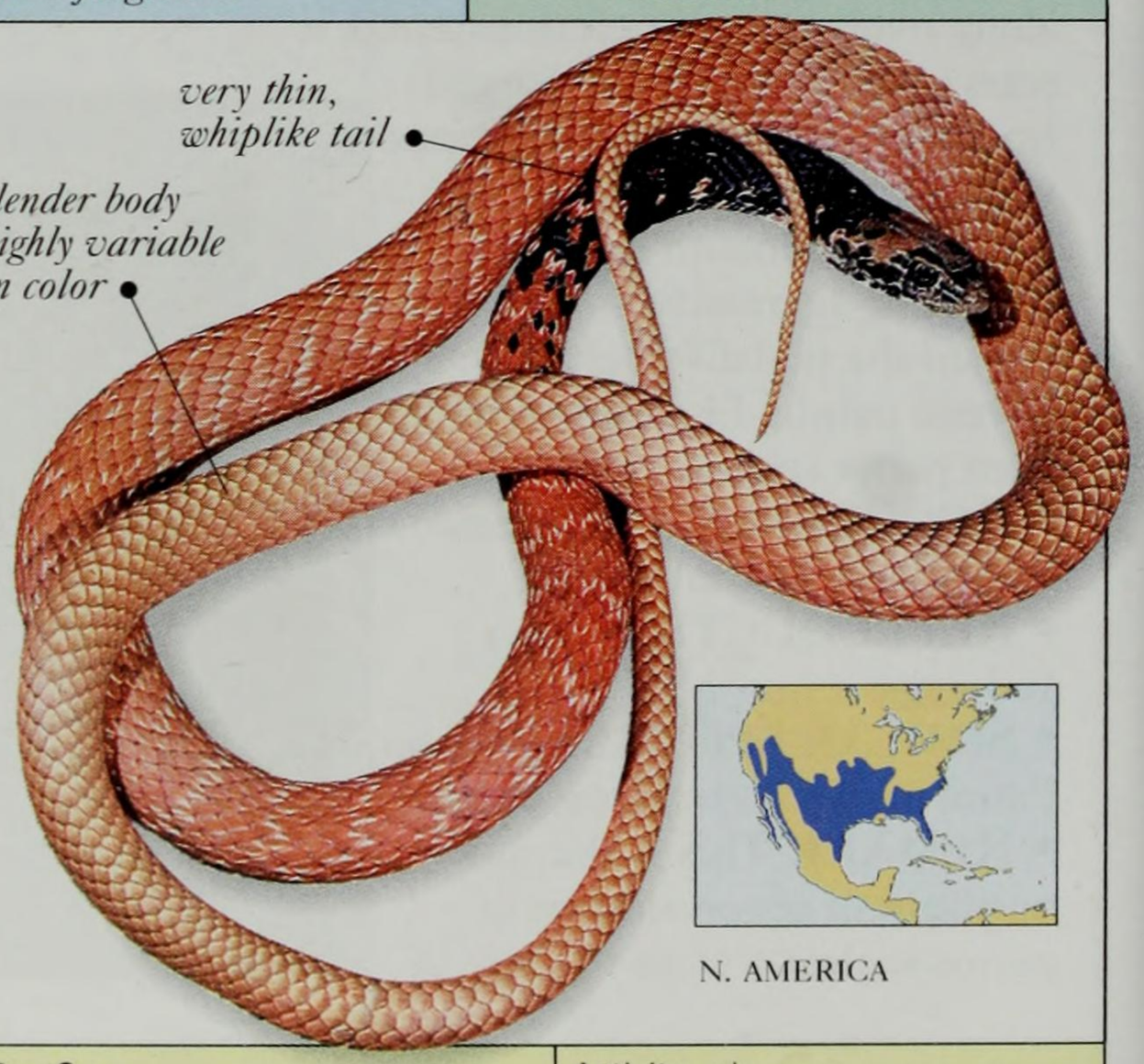
COACHWHIP

The Coachwhip is extremely variably colored. Individuals may be black, brown, or buff, either uniform in color or with yellow stripes or bands. Some individuals may be entirely red or pink. These highly active snakes hunt using vision and run their prey down quickly. They flee from man but bite vigorously if handled.

• **OCCURRENCE** North America. In prairies, desert, woodland, and farmland.

• **REPRODUCTION** Lays 4–20 eggs.

• **SIMILAR SPECIES** Sonoran Whipsnake (*Masticophis bilineatus*), Striped Whipsnake (*M. taeniatus*).



N. AMERICA

Length 3–8ft (0.9–2.5m)	Diet	Activity ☼

Family COLUBRIDAE	Species *Mehelya capensis*	Status Common

CAPE FILESNAKE

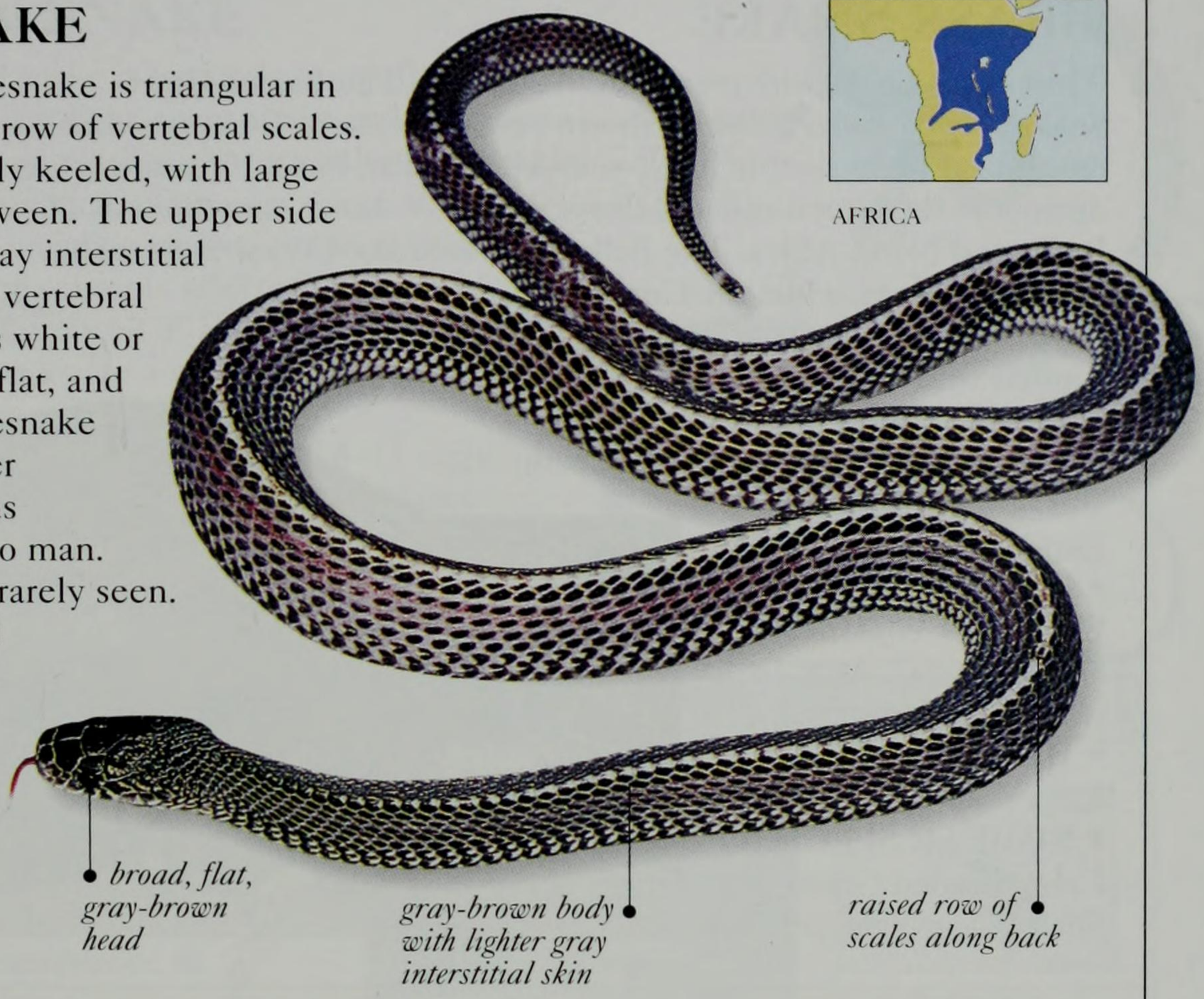
The body of the Cape Filesnake is triangular in cross section, with a raised row of vertebral scales. The body scales are strongly keeled, with large areas of skin visible in between. The upper side is gray-brown, with light gray interstitial skin and a yellow or cream vertebral stripe, and the underside is white or cream. The head is broad, flat, and gray-brown. The Cape Filesnake is a deadly predator of other snakes, including venomous species, but it is harmless to man. Although widespread, it is rarely seen.

• **OCCURRENCE** E. and S. Africa. In savanna and coastal woodland.

• **REPRODUCTION** Lays 5–13 eggs.

• **SIMILAR SPECIES** Angola Filesnake (*Mehelya vernayi*), Purple Filesnake (*M. poensis*).

AFRICA



Length 4–5ft (1.2–1.6m)	Diet	Activity

Family COLUBRIDAE	Species *Natrix maura*	Status Common

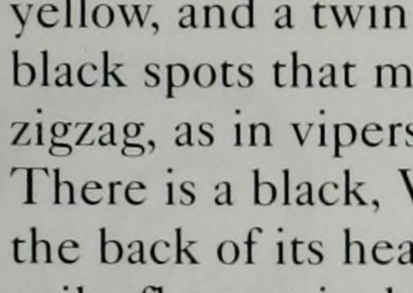
VIPERINE WATERSNAKE

This snake resembles a venomous viper in both patterning and defensive behavior. It is olive-green to brown, with speckles of yellow, and a twin series of irregular black spots that may form a broken zigzag, as in vipers, along the back. There is a black, V-shaped marking on the back of its head. In defense, it coils, flattens its head, hisses, and launches closed-mouth mock strikes.

• **OCCURRENCE** S.W. Europe and N.W. Africa. In freshwater habitats.

• **REPRODUCTION** Lays 4–20 eggs.

• **SIMILAR SPECIES** Dice Snake or Tessellated Watersnake (*Natrix tessellata*).



EUROPE, AFRICA



Length 2–3ft (0.7–1m)	Diet	Activity

Family COLUBRIDAE	Species *Natrix natrix*	Status Common

GRASS SNAKE



EUROPE, AFRICA, ASIA

Most Grass Snakes are green or olive-brown. The Barred Grass Snake (*Natrix natrix helvetica*, shown here) of western Europe is usually recognized by its double black-and-yellow collar, but this feature is less distinct in the Green-collared Grass Snake (*N. natrix astreptophora*) of Iberia and North Africa. The Balkan Grass Snake (*N. natrix persa*) has two light stripes, while the Crimean Grass Snake (*N. natrix scutata*) is spotted with black. Grass Snakes are often seen gliding across water in search of frogs. They hiss, feign death, and void their cloacal glands when threatened.

• **OCCURRENCE**
Europe, N.W. Africa, and W. and C. Asia. In freshwater habitats.

• **REPRODUCTION**
Lays 8–40 eggs.

• **SIMILAR SPECIES**
Large-headed Grass Snake (*N. megalocephala*).



Length 4–6½ft (1.2–2m)	Diet	Activity

Family COLUBRIDAE	Species *Nerodia fasciata*	Status Common

BANDED WATERSNAKE



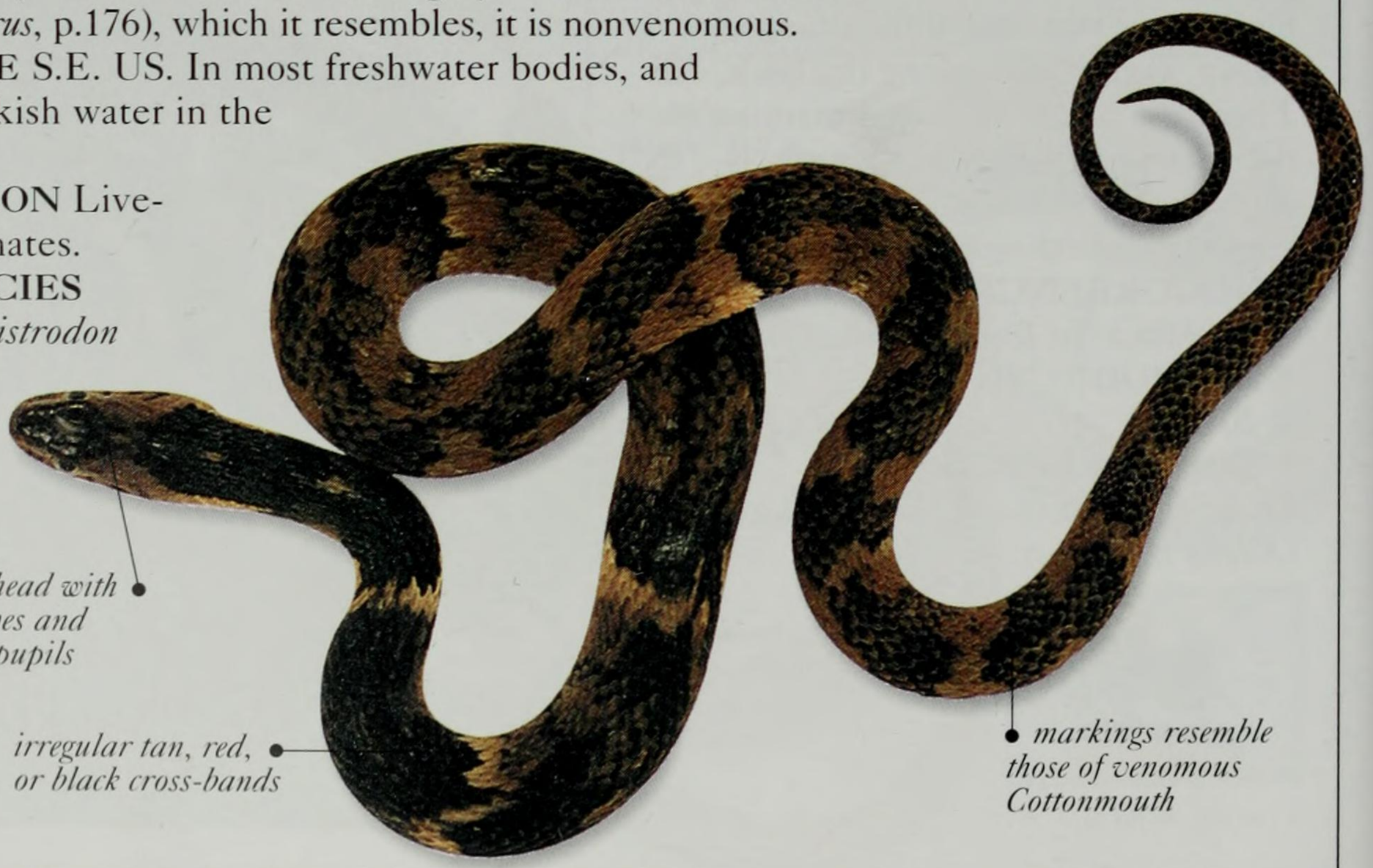
N. AMERICA

The Banded Watersnake is usually red, black, brown, or olive-green, with tan, red, or black cross-bands, but adult females may be entirely black. This species can be distinguished from most other watersnakes by a dark stripe from the eye to the mouth. It has a pugnacious temperament and will hiss, strike, and bite freely. However, unlike the highly venomous Cottonmouth (*Agkistrodon piscivorus*, p.176), which it resembles, it is nonvenomous.

• **OCCURRENCE** S.E. US. In most freshwater bodies, and sometimes in brackish water in the Mississippi delta.

• **REPRODUCTION** Live-bearing, 9–50 neonates.

• **SIMILAR SPECIES**
Cottonmouth (*Agkistrodon piscivorus*, p.176), Northern Watersnake (*Nerodia sipedon*).



Length 3–5ft (1–1.6m)	Diet	Activity

Family COLUBRIDAE	Species *Opheodrys aestivus*	Status Locally common

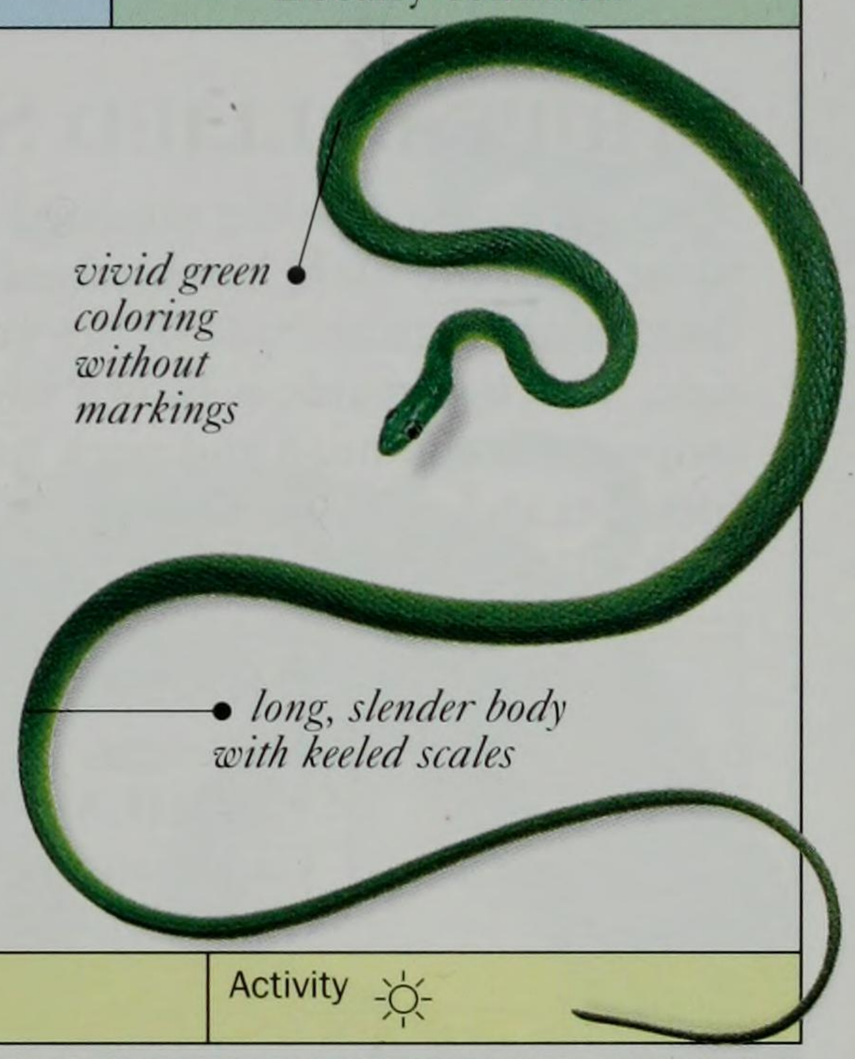
ROUGH GREEN SNAKE

This slender, keeled-scaled snake is perfectly camouflaged for a diurnal, arboreal existence. It is light green above and pale green to yellow-green below, with no markings. An excellent climber, it inhabits vines and other vegetation, often near water, which it enters occasionally. Its prey includes crickets, so populations of Rough Green Snakes may be seriously affected by pesticide use.



N. AMERICA

- **OCCURRENCE** E. North America and N.E. Mexico. In a wide variety of habitats, except true desert.
- **REPRODUCTION** Lays 4–11 eggs.
- **SIMILAR SPECIES** Smooth Green Snake (*Liochlorophis vernalis*).



Length 2½–5ft (0.8–1.6m)	Diet	Activity

Family COLUBRIDAE	Species *Oxybelis aeneus*	Status Common

BROWN VINESNAKE

With its long, narrow head, slender body, and extremely long tail, the Brown Vinesnake bears a strong resemblance to the twining stem of a climbing plant and can be almost invisible in vegetation. It may be brown or gray, and the underside of the head and body are white or pale green. A black line passes through the eye, breaking up the head shape.

- **OCCURRENCE** S.W. US to South America. In forest, woodland, and scrubland.
- **REPRODUCTION** Lays 3–5 eggs.



N. & S. AMERICA



Length 4–5½ft (1.3–1.7m)	Diet	Activity

Family COLUBRIDAE	Species *Pituophis melanoleucus*	Status Common

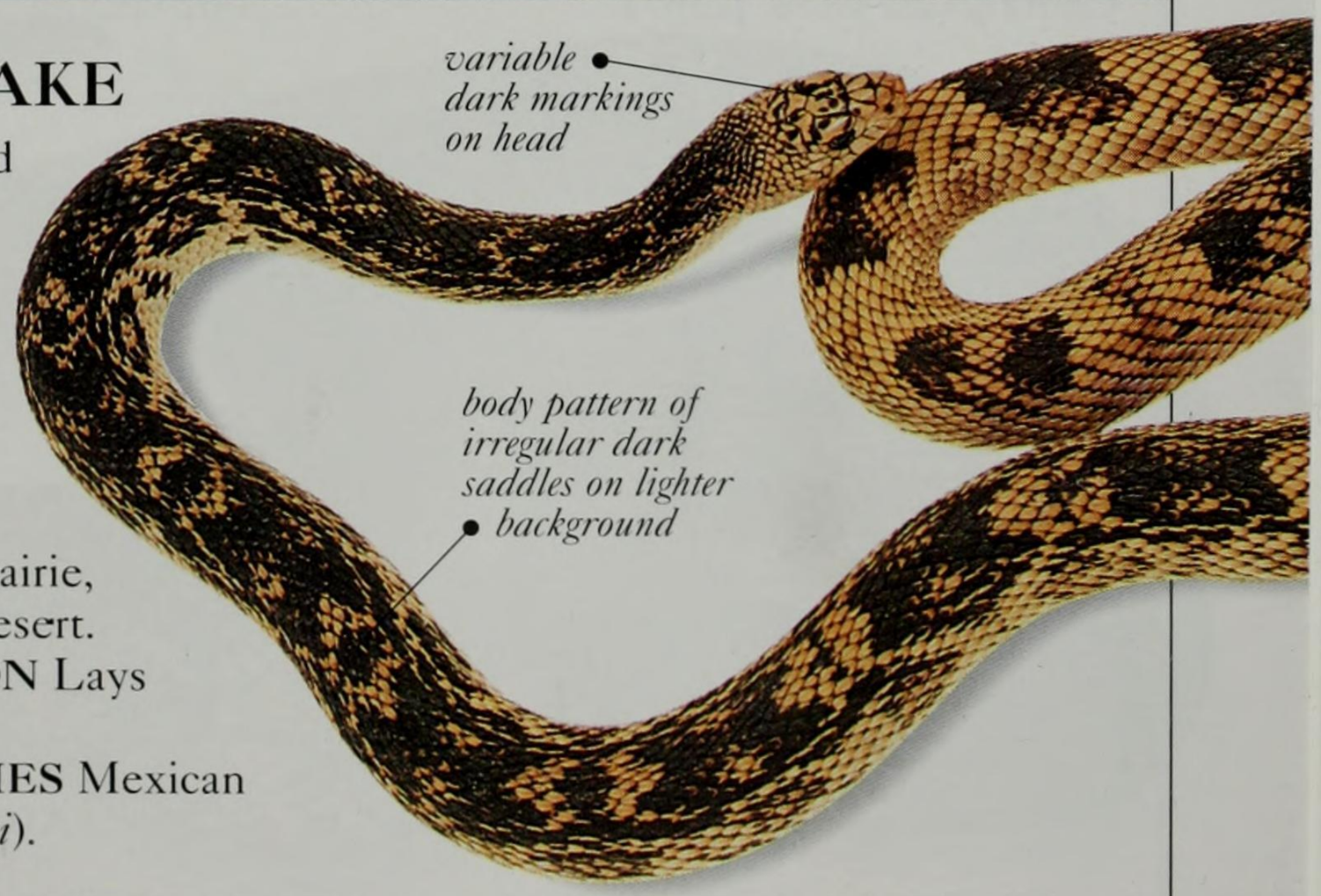
PINE OR GOPHER SNAKE

This large constrictor has strongly keeled dorsal scales. The color varies greatly among the 15 subspecies, from off-white with dark blotches, as in the Northern Pine Snake (*Pituophis melanoleucus melanoleucus*, shown here), to completely black.

- **OCCURRENCE** North America. From pineland to prairie, coastal forest, and desert.
- **REPRODUCTION** Lays 2–24 eggs.
- **SIMILAR SPECIES** Mexican Pine Snake (*P. deppei*).



N. AMERICA



Length 3–8ft (1–2.5m)	Diet	Activity

Family COLUBRIDAE	Species *Psammophis subtaeniatus*	Status Common

STRIPE-BELLIED SANDSNAKE ☠

This agile, fast-moving sandsnake takes its name from the twin, black-edged white stripes that occur on either side of the yellow underside. The upper side is brown with yellow stripes, and the head and neck have brown blotches and cross-bars on a lighter background.

• **OCCURRENCE** E. and S. Africa. In savanna and dry scrub.

• **REPRODUCTION** Lays 4–10 eggs.

• **SIMILAR SPECIES** Cape Sandsnake (*Psammophis leightoni*).



AFRICA



Length 3–4ft (1–1.3m)	Diet	Activity

Family COLUBRIDAE	Species *Pseudaspis cana*	Status Common

MOLE SNAKE

The Mole Snake is a stout-bodied, smooth-scaled snake with a pointed head and a protruding snout that is hooked downward for burrowing. Adults vary greatly in color from yellow-brown to red or black. Juveniles are patterned with a patchwork of dark brown blotches on a light brown background. The primarily subterranean adult preys mainly on moles, mole-rats, and rodents, which are captured underground. Juveniles feed on lizards. Males fight for supremacy in the breeding season and are capable of inflicting considerable damage upon one another.

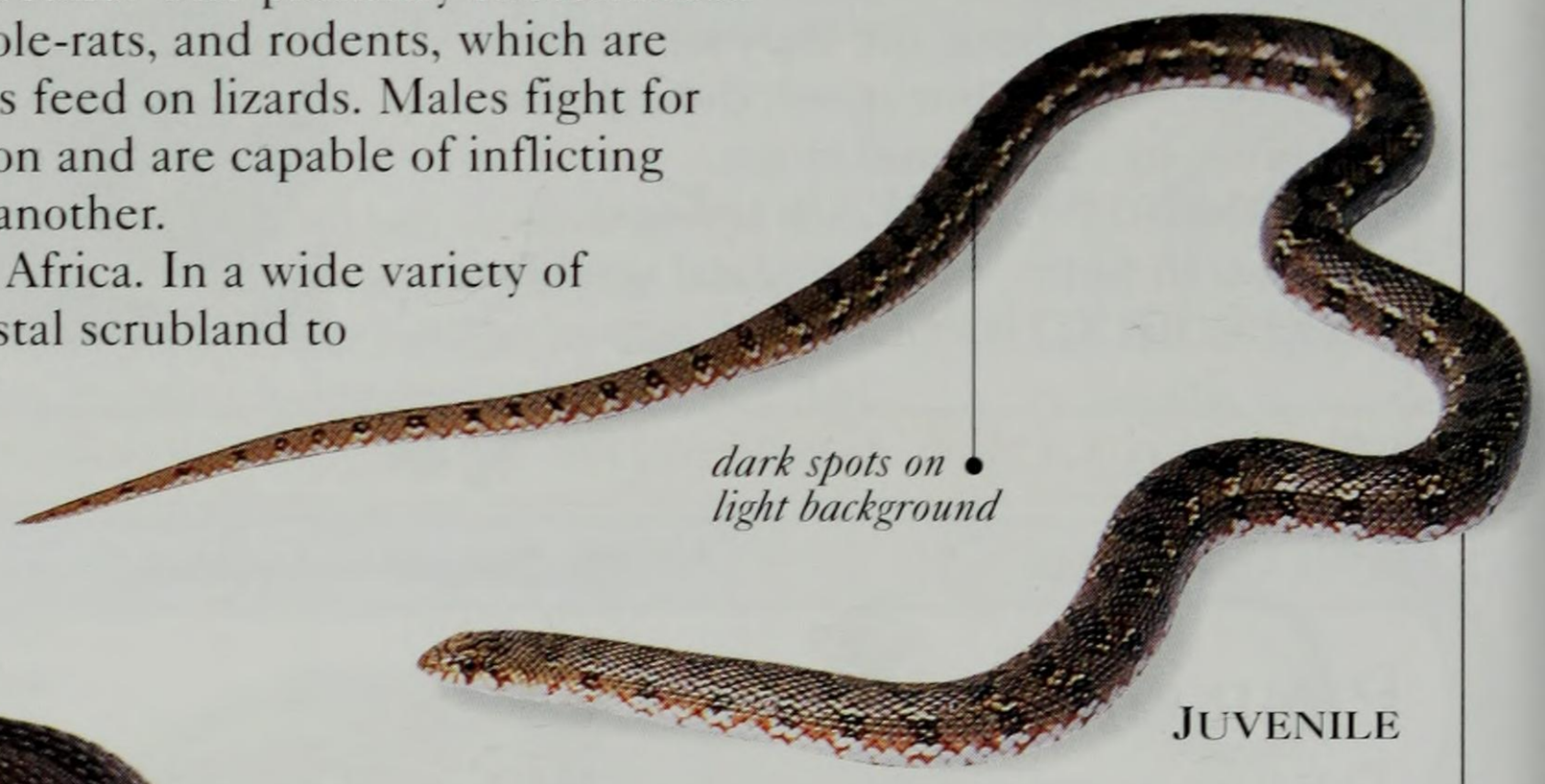
• **OCCURRENCE** S. and S.E. Africa. In a wide variety of habitats ranging from sandy coastal scrubland to desert and hilly grassland.

• **REPRODUCTION** Live-bearing, 25–90 neonates.

• **SIMILAR SPECIES** Cape Cobra (*Naja nivea*, p.167).



AFRICA



JUVENILE

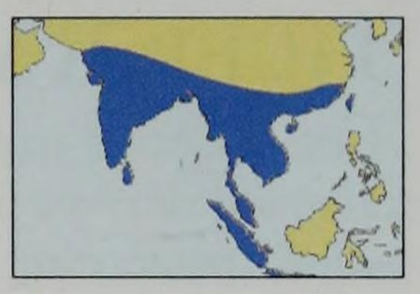


ADULT

Length 5–7ft (1.5–2.1m)	Diet	Activity

Family COLUBRIDAE	Species *Ptyas mucosus*	Status Common

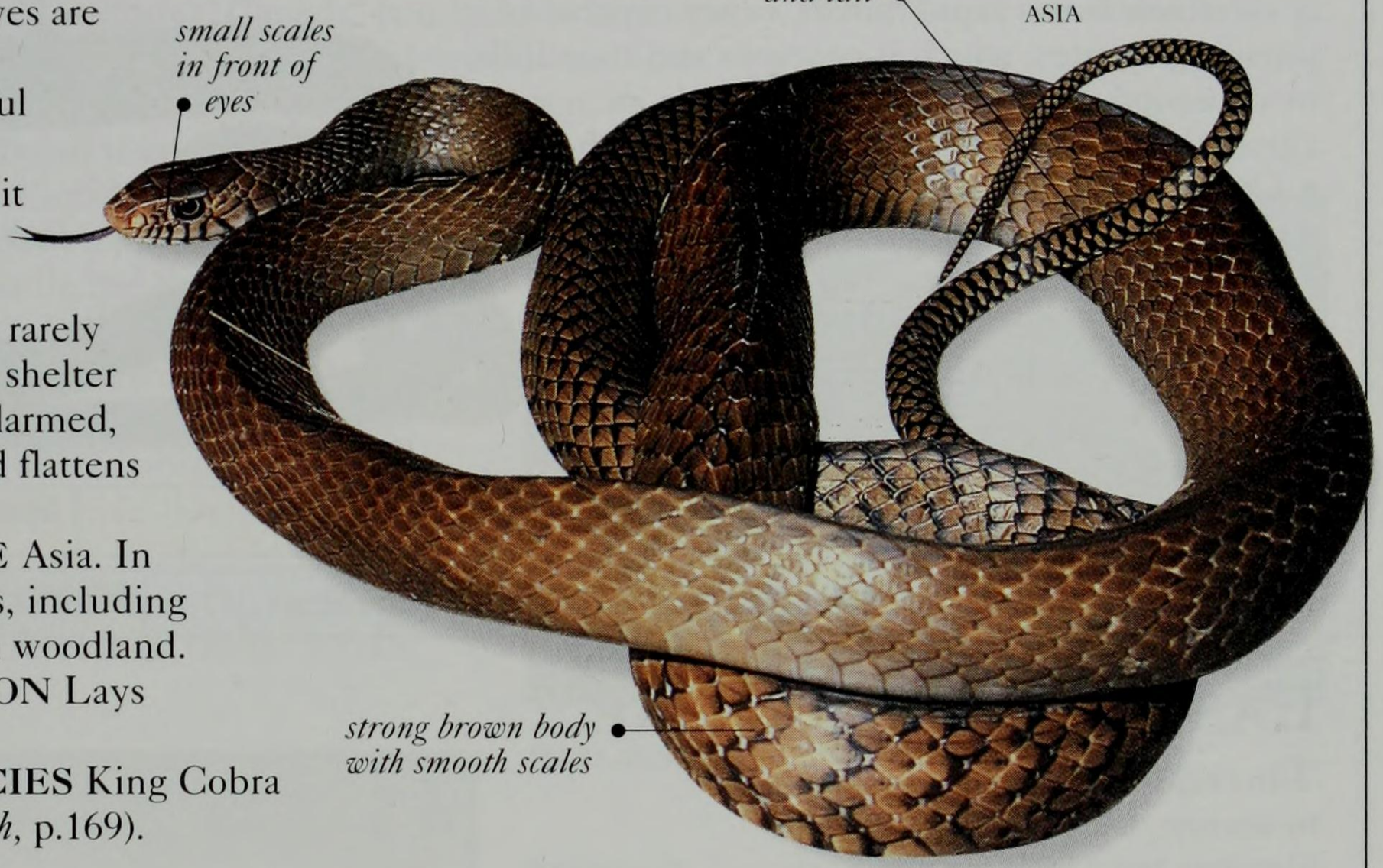
DHARMAN RATSNAKE



ASIA

This very large ratsnake is brown at the front of its body and brown with darker bars toward the rear. The large head is brown, the snout tip yellow, and the labial scales yellow with black edges. The eyes are large with round pupils. This powerful snake is not a constrictor; instead, it grasps its prey and swallows it alive. Mainly terrestrial, it rarely climbs, and it seeks shelter in burrows. When alarmed, it raises its body and flattens out its neck.

- **OCCURRENCE** Asia. In a variety of habitats, including rainforest and open woodland.
- **REPRODUCTION** Lays 6–18 eggs.
- **SIMILAR SPECIES** King Cobra (*Ophiophagus hannah*, p.169).



Length 4–12ft (1.3–3.7m)	Diet	Activity

Family COLUBRIDAE	Species *Rhinocheilus lecontei*	Status Locally common

LONG-NOSED SNAKE



N. AMERICA

A burrowing species occasionally encountered on roads after rain, this snake has a slender body and a long, pointed head with an overshot jaw. Colored red, black, and white, it resembles an American Milksnake (*Lampropeltis triangulum*, pp.142–43) or a coralsnake (*Micrurus* species, p.164) but has alternating black and red saddles on an off-white background rather than complete rings. Its defensive behavior includes vibrating the tail on the ground and expelling blood and feces from the cloaca.

- **OCCURRENCE** S.W. US and N. Mexico. In desert, prairie, and scrubland.
- **REPRODUCTION** Lays 4–11 eggs.
- **SIMILAR SPECIES** American Milksnake (*L. triangulum*, pp.142–43), Shovel-nosed Snakes (*Chionactis* species).



Length 1½–3ft (0.5–1m)	Diet	Activity

Family COLUBRIDAE	Species *Spilotes pullatus*	Status Locally common

TIGER RATSNAKE

The common name of this large, tropical, arboreal ratsnake derives from its vivid black or brown and yellow patterning (the degree of black and yellow is variable). It is a rapid mover, easily capable of pursuing its prey, which it captures and then kills by constriction. The Tiger Ratsnake is an aggressive species and rears and bites freely.

• **OCCURRENCE** Central and South America. In riverine forest, coastal forest, and mangrove swamps.

• **REPRODUCTION** Lays 7–10 eggs.

• **SIMILAR SPECIES** Puffing Snake (*Pseustes poecilonotus*).



C. & S. AMERICA



Length 5–6½ft (1.5–2m)	Diet	Activity

Family COLUBRIDAE	Species *Telescopus semiannulatus*	Status Common

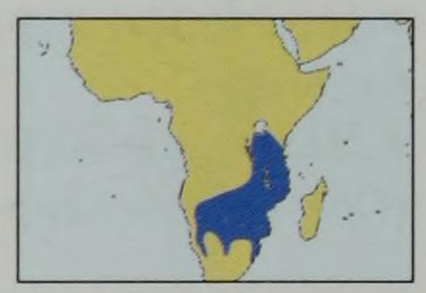
EASTERN TIGERSNAKE

This tigersnake is salmon-pink to orange, with a pattern of dark blotches or saddles on the back, which begin with a dark nape band and continue to the tail. Although mainly terrestrial, it climbs well and raids birds' nests.

• **OCCURRENCE** E. and S. Africa. In savanna.

• **REPRODUCTION** Lays 5–20 eggs.

• **SIMILAR SPECIES** Namib Tiger Snake (*Telescopus beetzii*).



AFRICA



Length 2½–3ft (0.8–1m)	Diet	Activity

Family COLUBRIDAE	Species *Thamnophis proximus*	Status Common

WESTERN RIBBON SNAKE

This is usually brown to black above, often with lighter flecks, and off-white to buff below. Its sides are striped white, and the back is striped white, orange, yellow, or red.

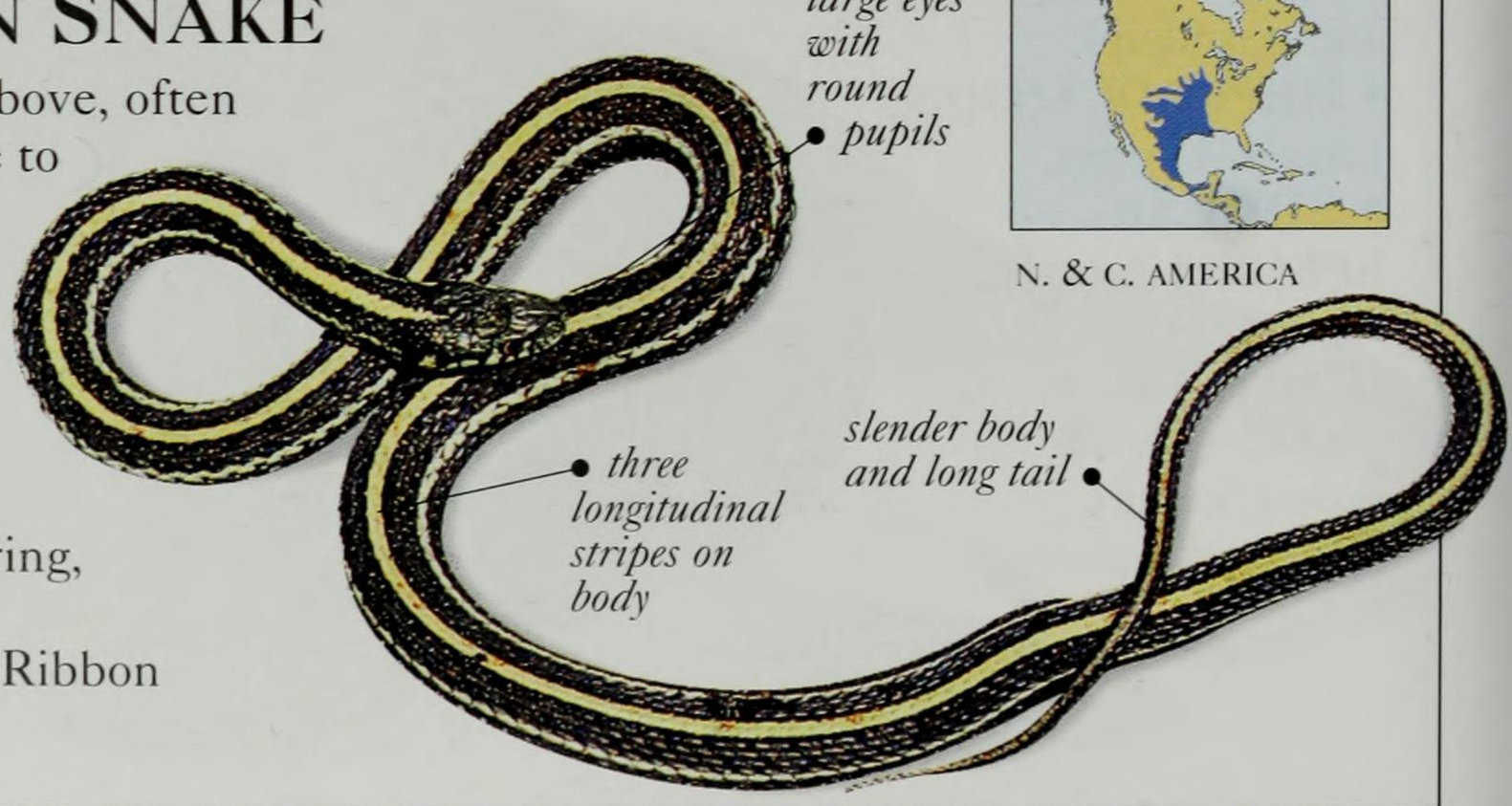
• **OCCURRENCE** North and Central America. In freshwater habitats.

• **REPRODUCTION** Live-bearing, 4–27 neonates.

• **SIMILAR SPECIES** Eastern Ribbon Snake (*Thamnophis sauritus*).



N. & C. AMERICA



Length 2–4ft (0.7–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Thamnophis sirtalis*	Status Common

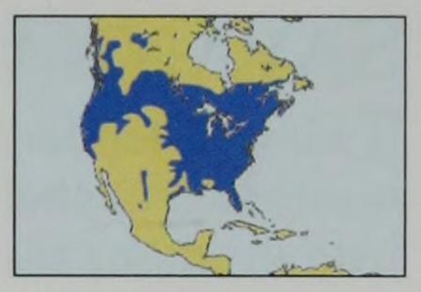
COMMON GARTER SNAKE

There are 11 subspecies of Common Garter Snake, the most widespread being the Red-sided Garter Snake (*Thamnophis sirtalis parietalis*), which occurs just within the Arctic Circle in southern Northwest Territories, Canada. It is black with three vivid yellow stripes and red flashes on the lower sides. The Eastern Garter Snake (*T. sirtalis sirtalis*) is olive-green, with black checkerboard markings and pale yellow stripes. The Florida Blue-striped Garter Snake (*T. sirtalis similis*) is dark with light blue stripes, while the San Francisco Garter Snake (*T. sirtalis infernalis*) has black-edged white stripes and red areas on the sides.

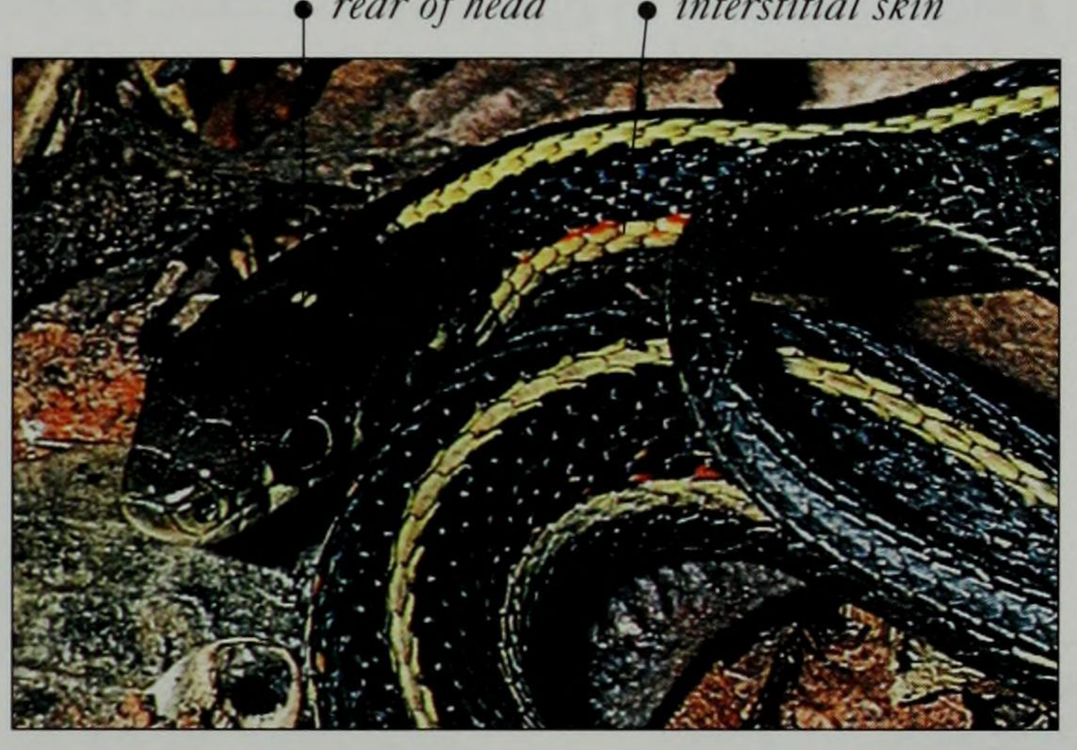
• **OCCURRENCE** US, Canada, and N. Mexico. In freshwater habitats.

• **REPRODUCTION** Live-bearing, 11–23 neonates.

• **SIMILAR SPECIES** Plains Garter Snake (*T. radix*), Western Terrestrial Garter Snake (*T. elegans*).



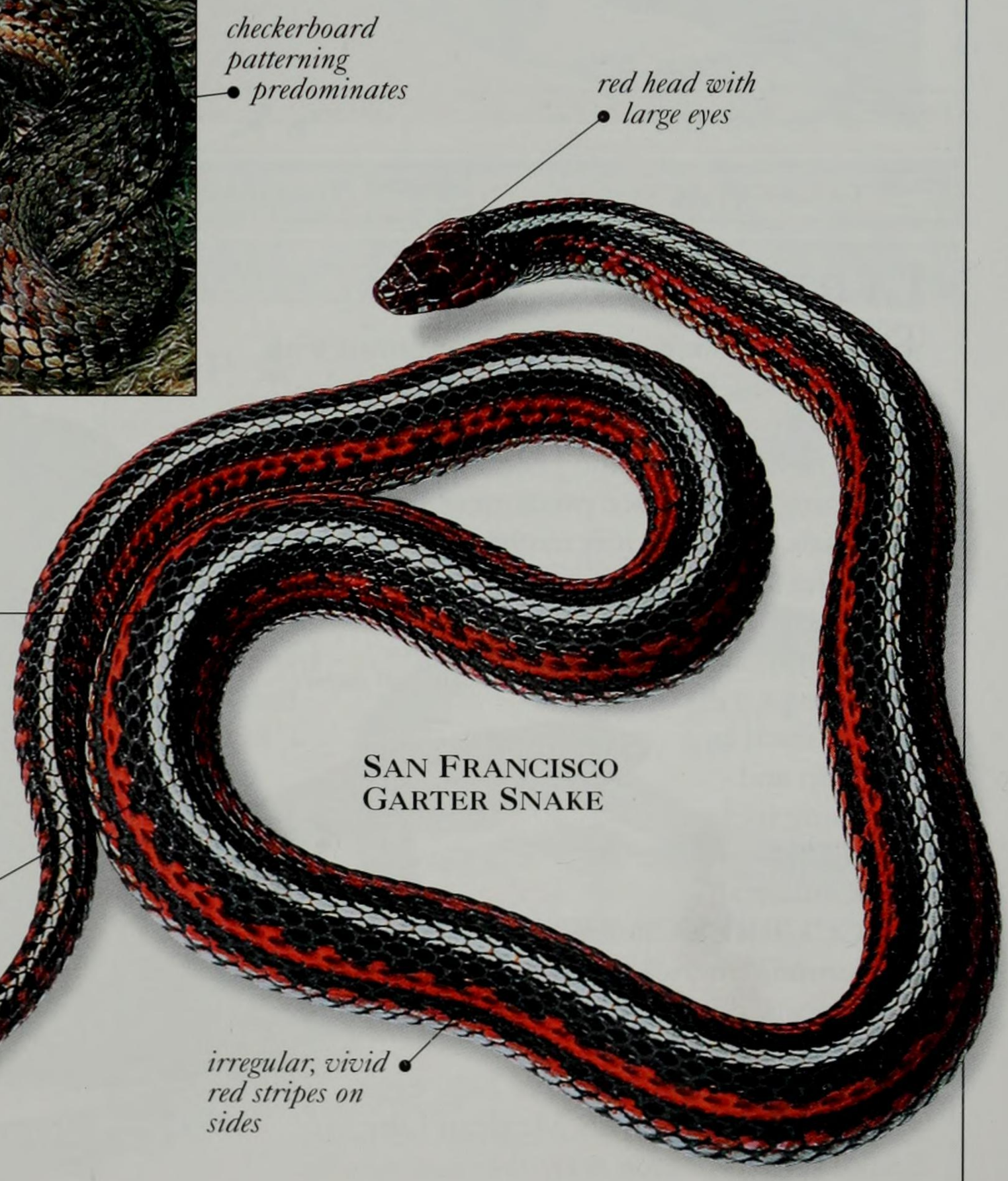
N. AMERICA



RED-SIDED GARTER SNAKE



EASTERN GARTER SNAKE



SAN FRANCISCO GARTER SNAKE

Length 2–4ft (0.7–1.3m)	Diet	Activity

Family COLUBRIDAE	Species *Thelotornis capensis*	Status Common

SAVANNA TWIGSNAKE ☠



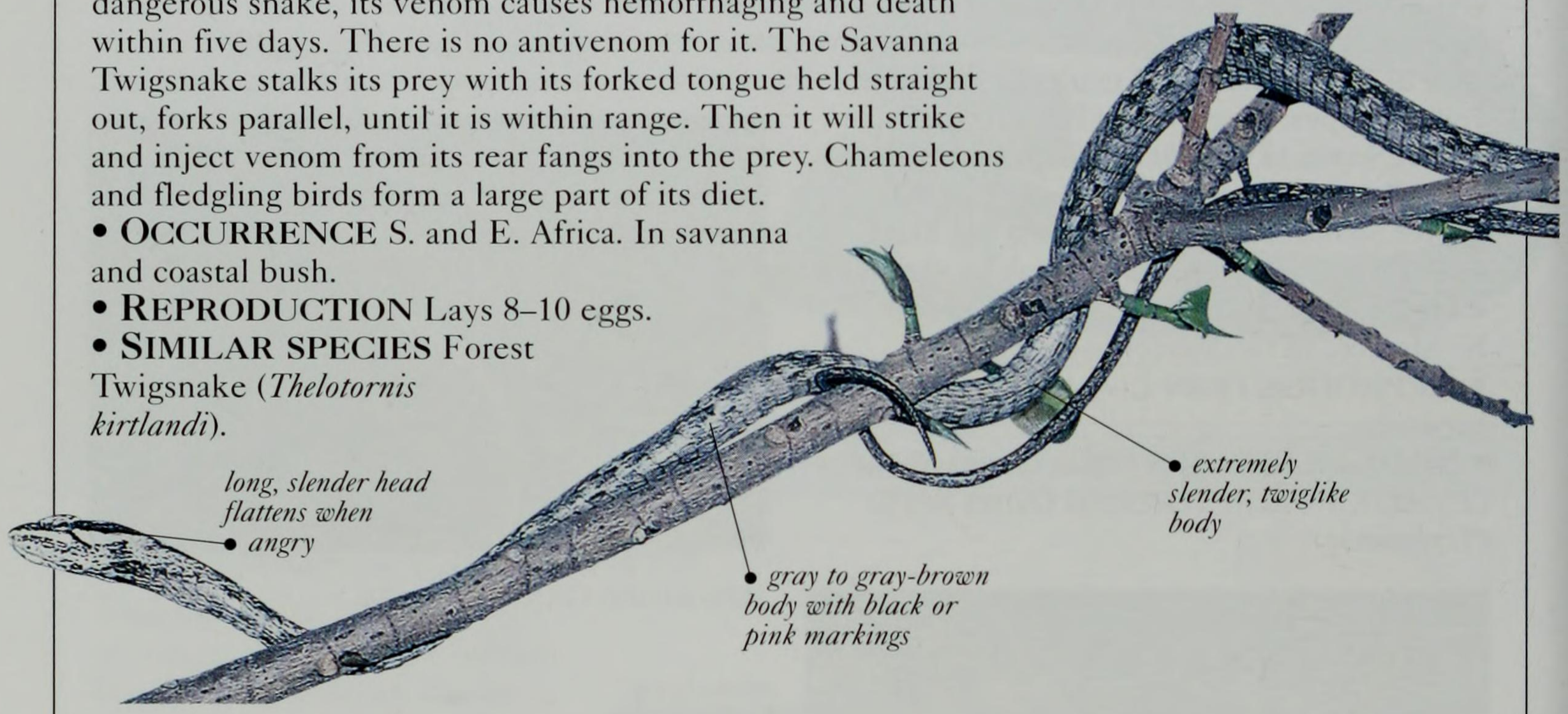
AFRICA

This is a slender-bodied species with a long head and eyes with horizontal, keyhole pupils. The coloration is gray to gray-brown with overlying black or pink bands and blotches. The top of the head is blue-green suffused with black and pink flecks. A very dangerous snake, its venom causes hemorrhaging and death within five days. There is no antivenom for it. The Savanna Twigsnake stalks its prey with its forked tongue held straight out, forks parallel, until it is within range. Then it will strike and inject venom from its rear fangs into the prey. Chameleons and fledgling birds form a large part of its diet.

• **OCCURRENCE** S. and E. Africa. In savanna and coastal bush.

• **REPRODUCTION** Lays 8–10 eggs.

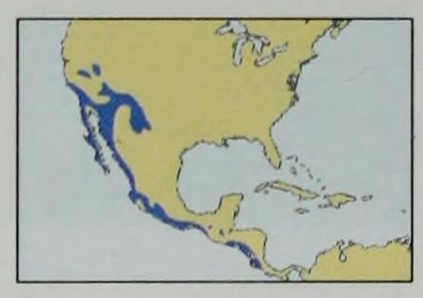
• **SIMILAR SPECIES** Forest Twigsnake (*Thelotornis kirtlandi*).



Length 2–3ft (0.6–1m)	Diet	Activity

Family COLUBRIDAE	Species *Trimorphodon biscutatus*	Status Locally common

LYRE SNAKE



N. & C. AMERICA

The Lyre Snake is usually gray or brown with darker brown, light-centered blotches and a brown, lyre-shaped mark on the back of the head. There is, however, some geographical variation in patterning. A secretive predator of lizards, small mammals, and bats, it is rarely seen except on roads after dark. Prey is immobilized by a combination of venom and constriction. A Lyre Snake will defend itself by rising up and flattening its head, hissing, and making mock strikes.

• **OCCURRENCE** S.W. US and E. Central America. In lowland thornscrub, desert grassland, and rocky scree.

• **REPRODUCTION** Lays 7–20 eggs.

• **SIMILAR SPECIES** Mexican Lyre Snake (*Trimorphodon tau*).



Length 1½–4ft (0.5–1.2m)	Diet	Activity

Family COLUBRIDAE	Species *Xenodon rabdocephalus*	Status Common

FALSE LANCEHEAD

With its lance-shaped head and broad, stocky body patterned with light and dark brown blotches, this terrestrial species can easily be mistaken for a highly venomous lancehead (*Bothrops* species, pp.180–81). However, it lacks the true lancehead's heat-sensitive pits and hinged front fangs. Its bite, although painful, is not considered dangerous. The enlarged rear teeth are designed to puncture toads, the primary prey. The round pupils of the eyes are also a distinguishing characteristic.

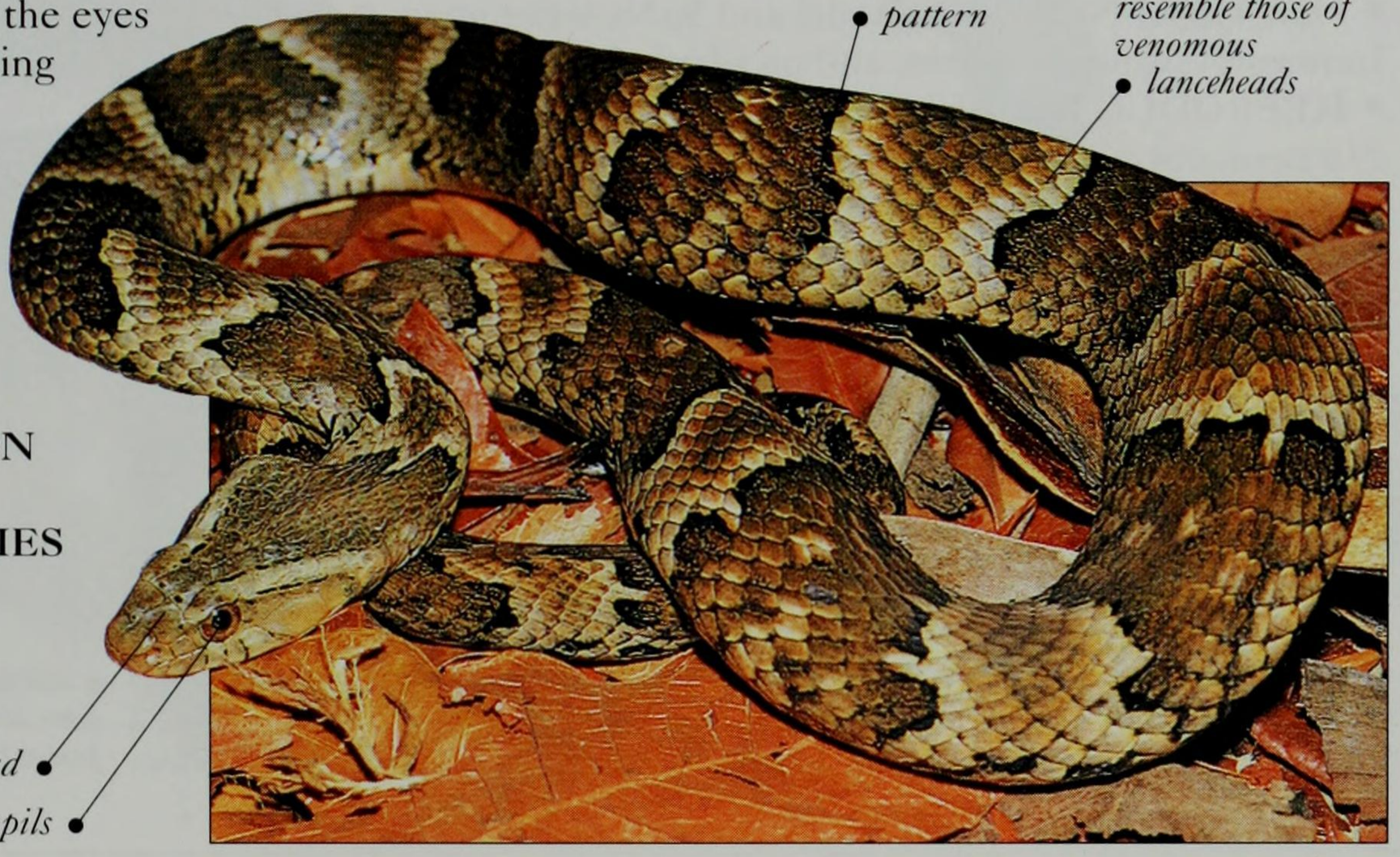


C. & S. AMERICA

• **OCCURRENCE** Central and South America. In tropical forest, usually in damp, riverside habitats.

• **REPRODUCTION** Lays 8–12 eggs.

• **SIMILAR SPECIES** Neuwied's False Lancehead (*Xenodon neuwiedi*).



Length 2–4ft (0.6–1.2m)	Diet	Activity

Family ATRACTASPIDAE	Species *Atractaspis bibroni*	Status Common

BIBRON'S BURROWING ASP ☠

Also known as the Stiletto Snake or the Side-stabbing Snake, this species has a dark brown cylindrical body, with an off-white underside, and is covered in small, smooth scales. The short tail ends in a sharp spine to aid burrowing. The eyes are small with round pupils, and the head is rounded with a projecting rostral scale for burrowing. Bibron's Burrowing Asps have large, horizontal fangs. If touched near the head, one or both fangs can be pushed out between the lips as the snake strikes sideways and backward, delivering a rapid bite without opening its mouth. Its venom causes intense pain and swelling, which cannot be alleviated with antivenom.

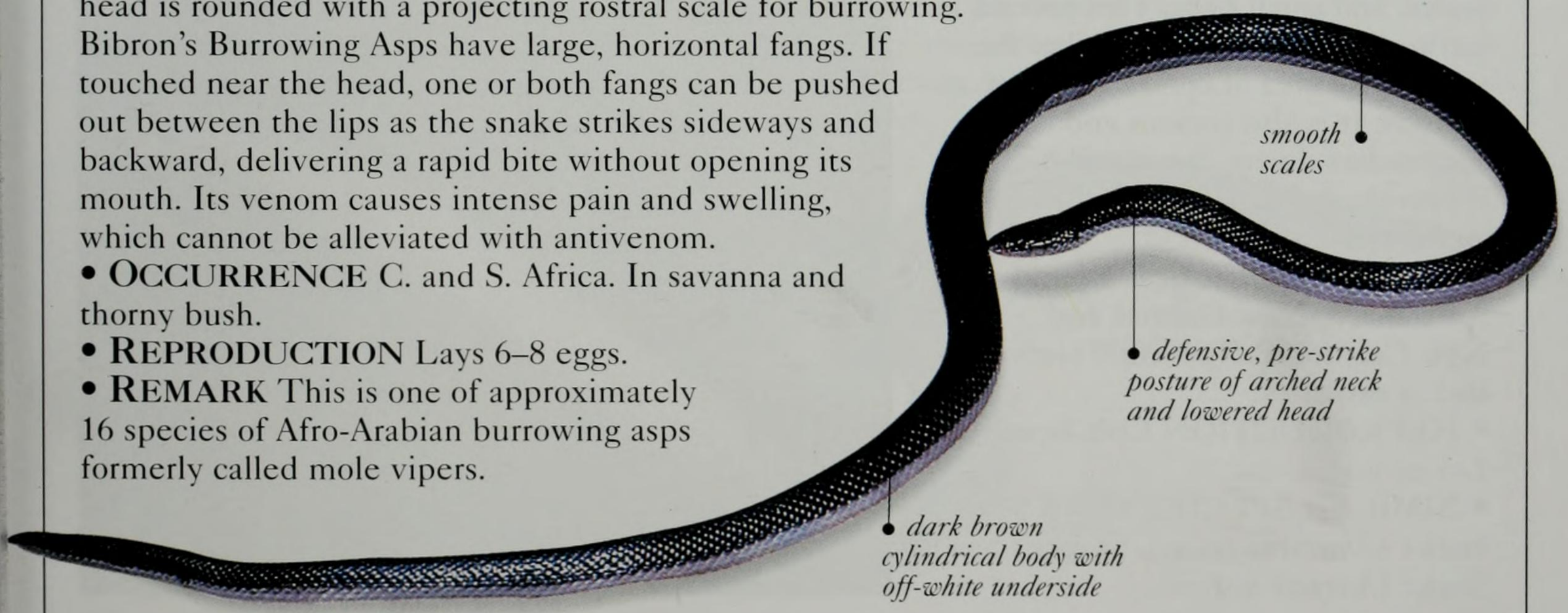


AFRICA

• **OCCURRENCE** C. and S. Africa. In savanna and thorny bush.

• **REPRODUCTION** Lays 6–8 eggs.

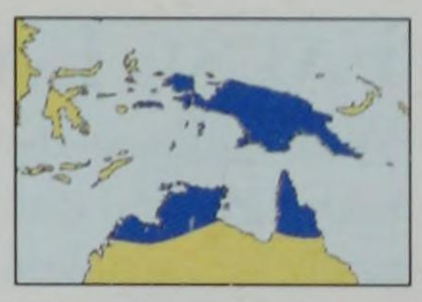
• **REMARK** This is one of approximately 16 species of Afro-Arabian burrowing asps formerly called mole vipers.



Length 20–28in (50–70cm)	Diet	Activity

Family ELAPIDAE	Species *Acanthophis praelongus*	Status Common

NORTHERN DEATH ADDER ☠



AUSTRALASIA

In many ways, this elapid resembles a viper – it has a stout body, broad head, and secretive habits; like most vipers, it is a nocturnal, sit-and-wait ambusher. However, vipers are absent from Australasia. The Northern Death Adder has a short, slender tail, weakly keeled body scales, raised scales over the eyes, and vertical pupils. Coloration varies from gray to red, brown, or black. The slender tail tip is yellow or white to lure prey.

• **OCCURRENCE** N. Australia and S. New Guinea. In forest, savanna, gardens, and on plantations.

• **REPRODUCTION** Live-bearing, 2–8 neonates.

• **SIMILAR SPECIES** Southern Death Adder (*Acanthophis antarcticus*).



Length 1–3ft (0.3–1m)	Diet	Activity

Family ELAPIDAE	Species *Aipysurus laevis*	Status Locally common

OLIVE-BROWN SEA SNAKE ☠



AUSTRALASIA

This is a variable species ranging from brown to purple-brown, with paler coloration below. Faint bands of dark-centered scales may be present. It has a laterally compressed body, with a broad, paddlelike tail for swimming, smooth scales, and small eyes. This species is territorial, often remaining near the same small area of coral reef for long periods. It is also curious and often approaches divers, but it will bite only if provoked. Its diet consists of fish and crustaceans.

• **OCCURRENCE** Seas around Australia, S. New Guinea, and New Caledonia. Near coral reefs and in estuaries.

• **REPRODUCTION** Live-bearing, 2–5 neonates.

• **SIMILAR SPECIES** Brown Sea Snake (*Aipysurus fuscus*), Stokes's Sea Snake (*Astrotia stokesii*).



Length 4–7ft (1.2–2.2m)	Diet	Activity

Family ELAPIDAE	Species *Aspidelaps lubricus*	Status Locally common

SOUTH AFRICAN CORALSNAKE ☠

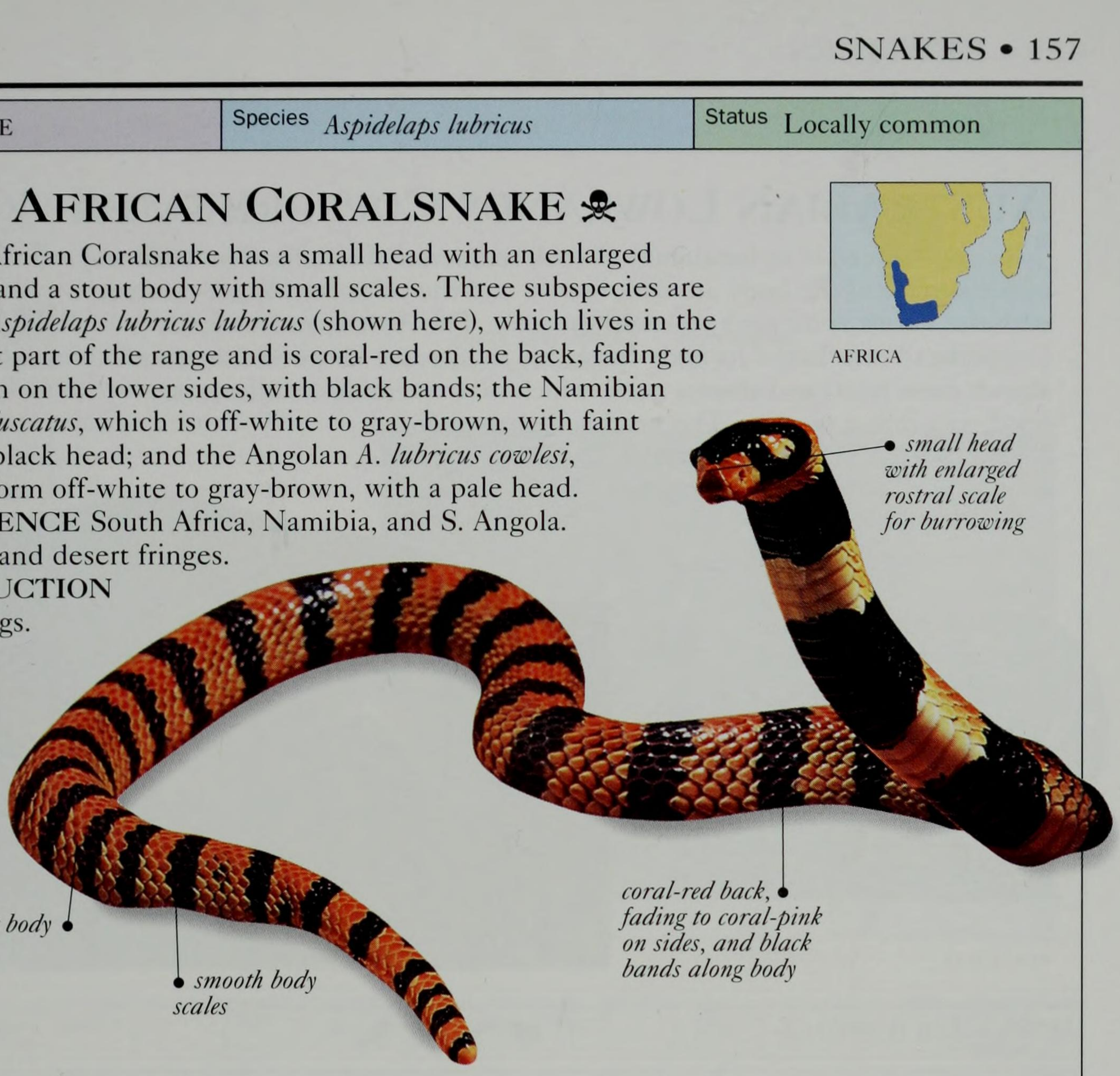
AFRICA

The South African Coralsnake has a small head with an enlarged rostral scale, and a stout body with small scales. Three subspecies are recognized: *Aspidelaps lubricus lubricus* (shown here), which lives in the southernmost part of the range and is coral-red on the back, fading to pinkish cream on the lower sides, with black bands; the Namibian *A. lubricus infuscatus*, which is off-white to gray-brown, with faint bands and a black head; and the Angolan *A. lubricus cowlesi*, which is uniform off-white to gray-brown, with a pale head.

• **OCCURRENCE** South Africa, Namibia, and S. Angola. In scrubland and desert fringes.

• **REPRODUCTION** Lays 3–11 eggs.

• **SIMILAR SPECIES** De Coster's Garter Snake (*Elapsoidea sundevallii decosteri*).



Length 20–31in (50–80cm)	Diet	Activity ☾

Family ELAPIDAE	Species *Aspidelaps scutatus*	Status Locally common

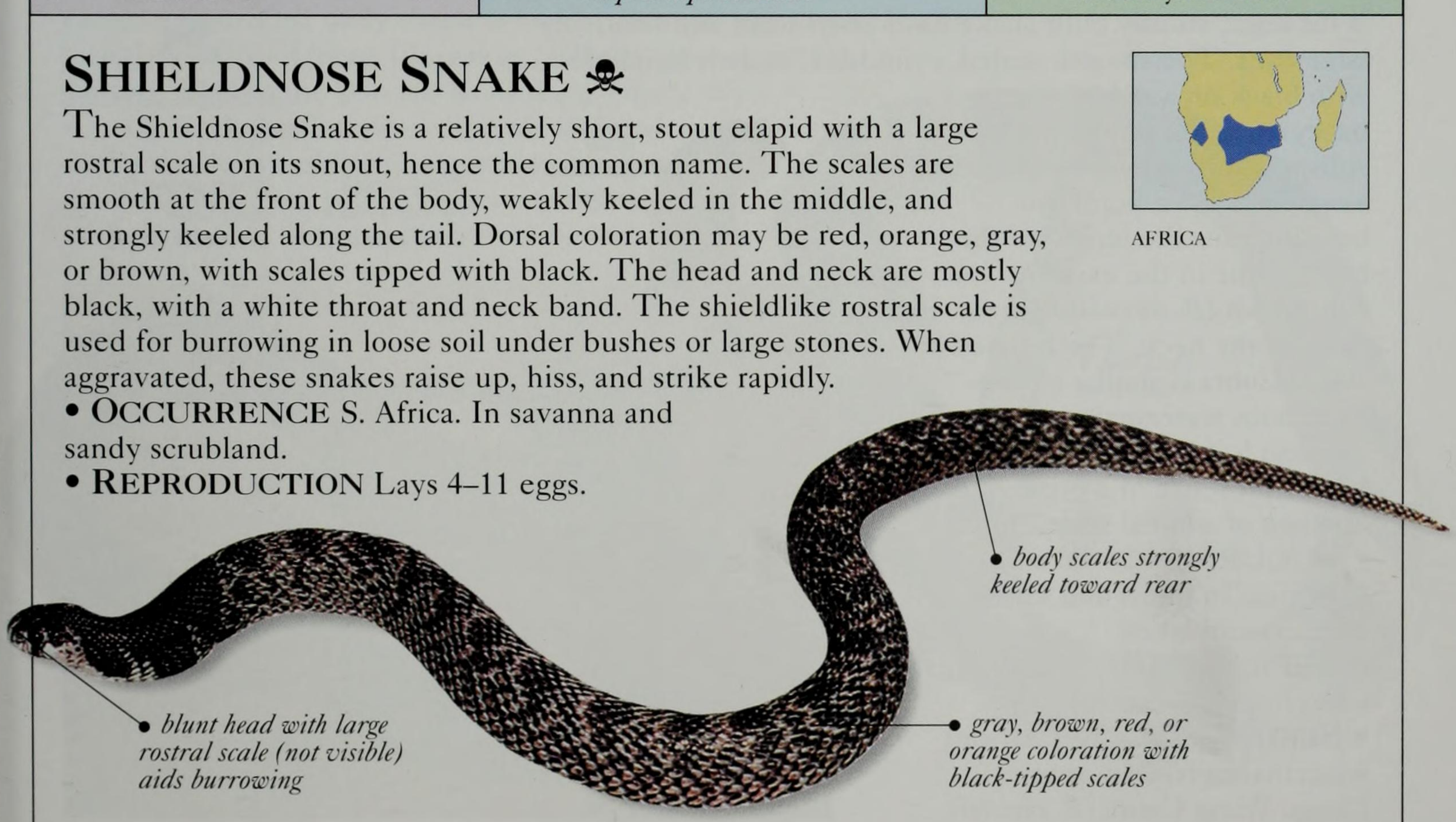
SHIELDNOSE SNAKE ☠

AFRICA

The Shieldnose Snake is a relatively short, stout elapid with a large rostral scale on its snout, hence the common name. The scales are smooth at the front of the body, weakly keeled in the middle, and strongly keeled along the tail. Dorsal coloration may be red, orange, gray, or brown, with scales tipped with black. The head and neck are mostly black, with a white throat and neck band. The shieldlike rostral scale is used for burrowing in loose soil under bushes or large stones. When aggravated, these snakes raise up, hiss, and strike rapidly.

• **OCCURRENCE** S. Africa. In savanna and sandy scrubland.

• **REPRODUCTION** Lays 4–11 eggs.



Length 20–30in (50–75cm)	Diet	Activity ☼

Family ELAPIDAE	Species *Austrelaps superbus*	Status Common

AUSTRALIAN LOWLANDS COPPERHEAD ☠

This copperhead is an inhabitant of cool, temperate Australia. The head and upper surface of the body are dark brown, and the sides are copper-colored, with the lowest scale rows yellowish in color. The Australian Lowlands Copperhead can flatten its body (probably to increase its surface area and absorb more heat) and also its neck, which may resemble a rudimentary hood, as a threat posture. The head is slightly pointed.

• **OCCURRENCE** S.E. Australia, including Tasmania. In marshes, woodland, and grassland.

• **REPRODUCTION** Live-bearing, 9–45 neonates.

• **SIMILAR SPECIES** Highlands Copperhead (*Austrelaps ramsayi*), Pygmy Copperhead (*A. labialis*).



AUSTRALIA



Length 4–5½ft (1.3–1.7m)	Diet	Activity

Family ELAPIDAE	Species *Boulengerina annulata*	Status Rare

BANDED WATER COBRA ☠

This large, stoutly built snake has a short head and relatively large eyes. The smooth-scaled, cylindrical body is banded with black on a red-brown background. In the western subspecies (*Boulengerina annulata annulata*, shown here) the banding runs the length of the body, while in the eastern subspecies (*B. annulata stormsi*) it stops at the neck. The Banded Water Cobra is similar to non-venomous watersnakes (*Grayia* species) but can be distinguished by the presence of a hood and the absence of a loreal scale.

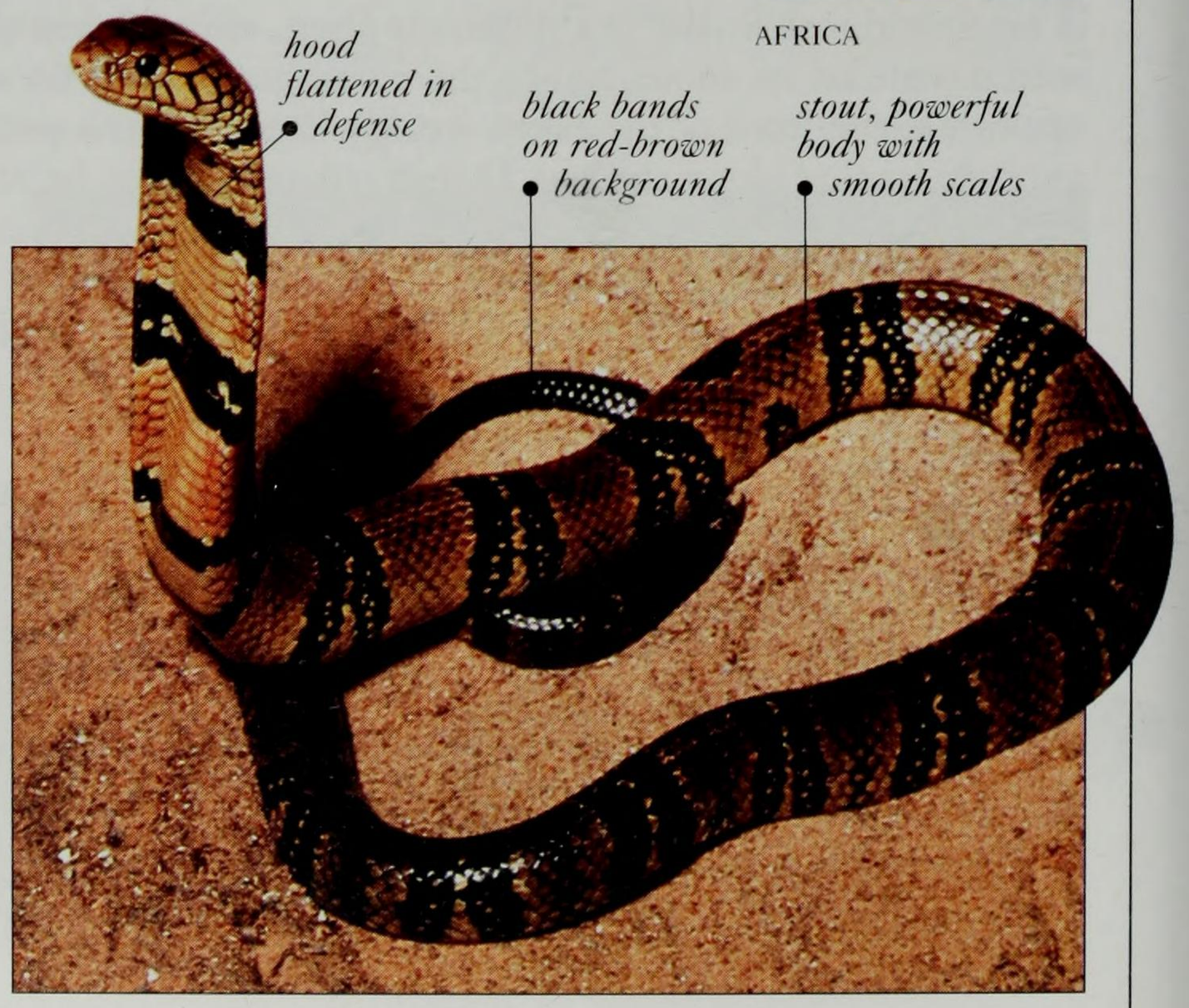
• **OCCURRENCE** W. and C. Africa. In forest and savanna, in rivers and lakes.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** African watersnakes (*Grayia* species), Congo Water Cobra (*B. christyi*).



AFRICA



Length 4½–9ft (1.4–2.7m)	Diet	Activity

Family ELAPIDAE	Species *Bungarus caeruleus*	Status Common

COMMON KRAIT ☠

The Common Krait is a large, smooth-scaled snake with patterning consisting of white bands on a glossy, blue-black background. Uniform dark specimens are also common. The head is slightly wider than the neck, and the eyes are relatively small. The Common Krait shelters in termite mounds during the day, and emerges at night to hunt other snakes, including smaller kraits, skinks, and mammals.

• **OCCURRENCE** Pakistan and Nepal to Sri Lanka. In savanna and woodland.
• **REPRODUCTION** Lays 8–12 eggs.
• **SIMILAR SPECIES** Jara Wolfsnake (*Lycodon jara*), Sind Krait (*Bungarus sindanus*).
• **REMARK** Of the 12 terrestrial krait species in Asia, the Common Krait is the one most often implicated in serious snakebites.



ASIA



Length 2½–5½ft (0.8–1.7m)	Diet	Activity ☾

Family ELAPIDAE	Species *Bungarus fasciatus*	Status Common

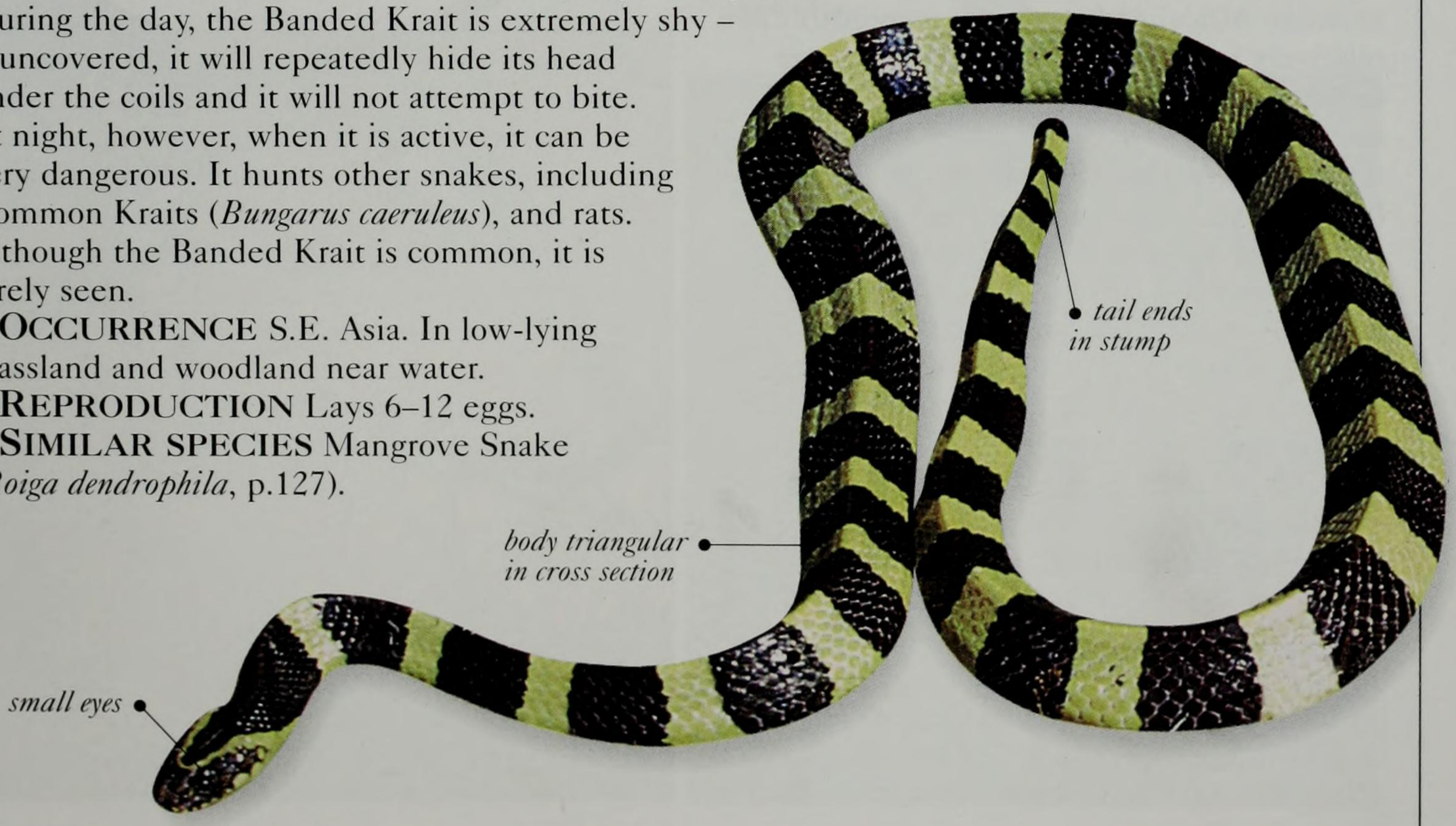
BANDED KRAIT ☠

The body of this species is ringed with yellow and black or brown bands, and the elevated backbone presents a triangular shape in cross section. This body shape is highly unusual, although it is also characteristic of African filesnakes (*Mehelya* species, p.147). During the day, the Banded Krait is extremely shy – if uncovered, it will repeatedly hide its head under the coils and it will not attempt to bite. At night, however, when it is active, it can be very dangerous. It hunts other snakes, including Common Kraits (*Bungarus caeruleus*), and rats. Although the Banded Krait is common, it is rarely seen.

• **OCCURRENCE** S.E. Asia. In low-lying grassland and woodland near water.
• **REPRODUCTION** Lays 6–12 eggs.
• **SIMILAR SPECIES** Mangrove Snake (*Boiga dendrophila*, p.127).



ASIA



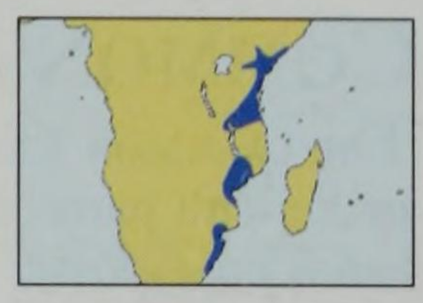
Length 5–7½ft (1.5–2.3m)	Diet	Activity ☾

Family ELAPIDAE	Species *Dendroaspis angusticeps*	Status Locally common

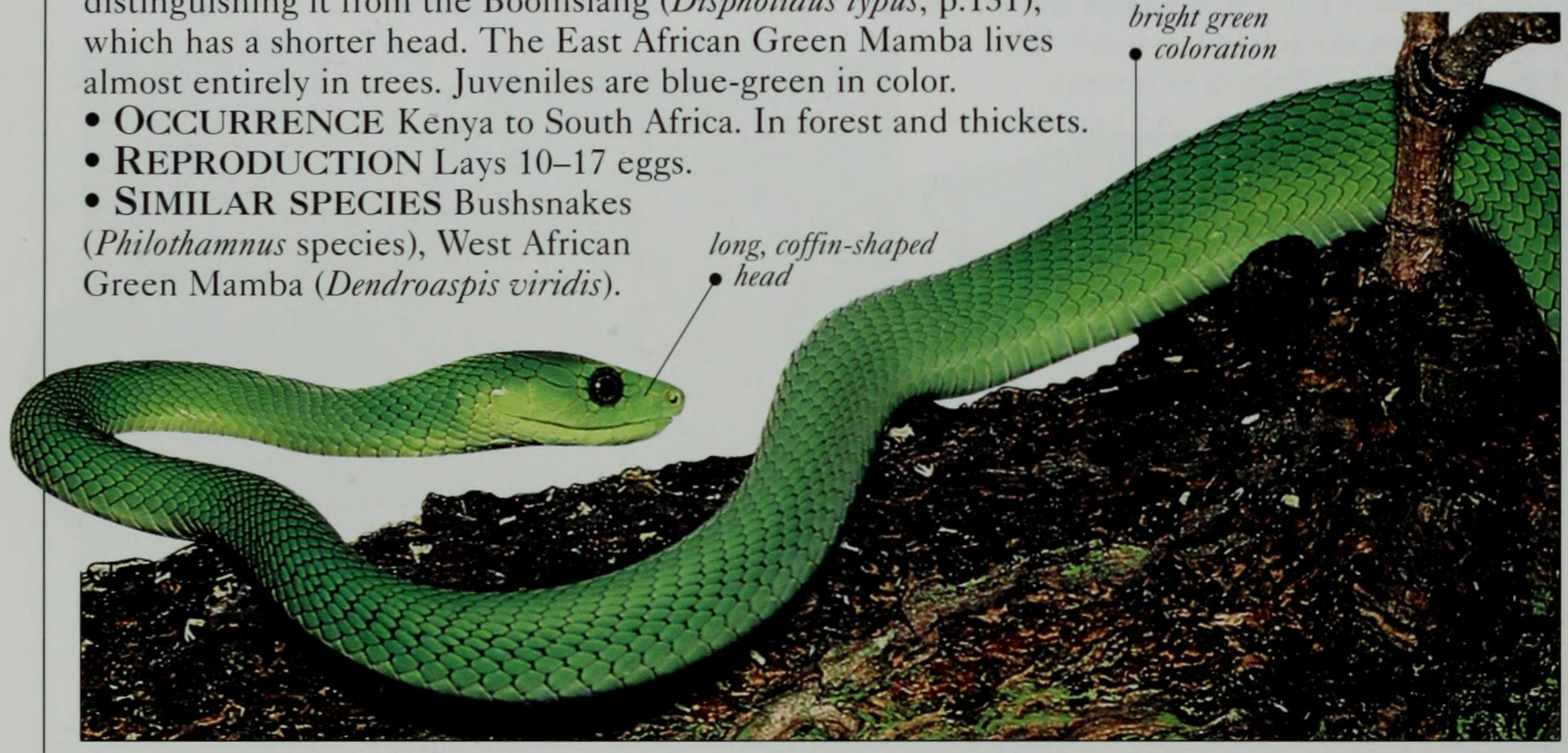
EAST AFRICAN GREEN MAMBA ☠

The East African Green Mamba is often confused with the more common but harmless, smaller, yellow-green bushsnakes (*Philothamnus* species) of tropical Africa. Like other mambas, the East African Green Mamba has a long, coffin-shaped head, distinguishing it from the Boomslang (*Dispholidus typus*, p.131), which has a shorter head. The East African Green Mamba lives almost entirely in trees. Juveniles are blue-green in color.

- **OCCURRENCE** Kenya to South Africa. In forest and thickets.
- **REPRODUCTION** Lays 10–17 eggs.
- **SIMILAR SPECIES** Bushsnakes (*Philothamnus* species), West African Green Mamba (*Dendroaspis viridis*).



AFRICA



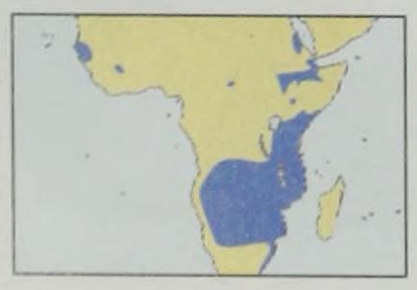
Length 5–8ft (1.5–2.5m)	Diet	Activity

Family ELAPIDAE	Species *Dendroaspis polylepis*	Status Locally common

BLACK MAMBA ☠

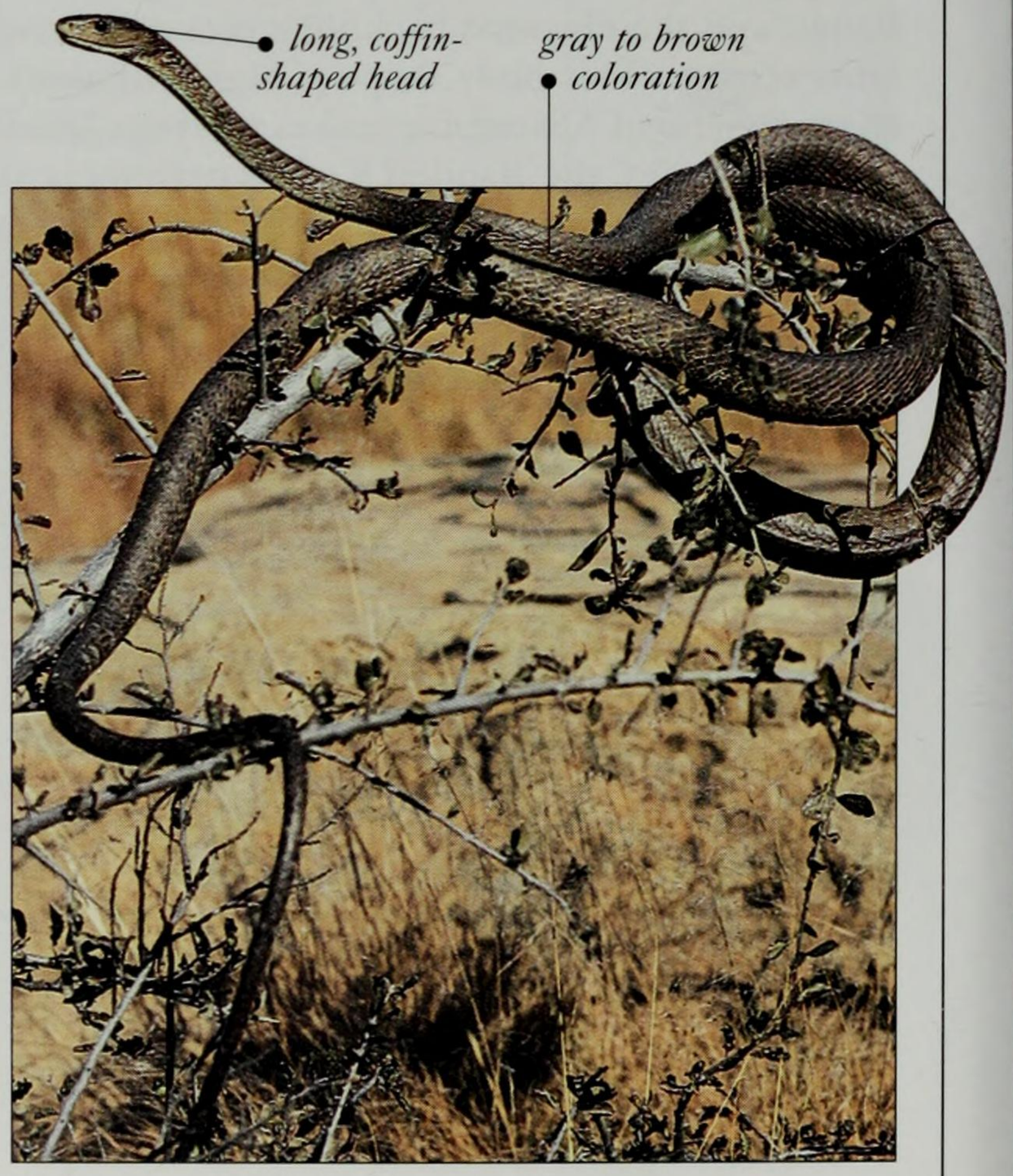
The Black Mamba is the most venomous snake in Africa. Although it is responsible for relatively few bites, the consequences are extremely serious, with death usually occurring within an hour. Black Mambas are not usually black; they are gunmetal gray to brown, with lighter gray on the side of the head. The only black pigment is inside the mouth, which is displayed when the mamba defends itself by rearing up, flattening its neck, and gaping. Black Mambas are very alert and agile, and are at home both on the ground and in the trees.

- **OCCURRENCE** E. and S. Africa, with isolated records in W. Africa. In savanna woodland and thornscrub.



AFRICA

- **REPRODUCTION** Lays 6–17 eggs.
- **SIMILAR SPECIES** Black treesnakes (*Thrasops* species), Forest Cobra (*Naja melanoleuca*).



Length 7–11½ft (2.2–3.5m)	Diet	Activity

Family ELAPIDAE	Species *Enhydrina schistosa*	Status Rare

COMMON BEAKED SEA SNAKE ☠

This moderately slender snake is white-gray, with indistinct, pale blue-gray bands. It has a long, dagger-shaped scale on the underside of its lower jaw and a large amount of expandable skin to permit a wide mouth gape. The Common Beaked Sea Snake is very dangerous owing to its highly toxic venom and irascible temperament.



INDIAN & PACIFIC OCEANS

• **OCCURRENCE** Seas around Persian Gulf to Philippines and N. Australia. In inshore shallow bays, estuaries, and freshwater rivers.

• **REPRODUCTION** Live-bearing, 3–30 neonates.

• **SIMILAR SPECIES** Zweifel's Beaked Sea Snake (*Enhydrina zweifeli*).

• **REMARK** A single bite from this species may contain sufficient venom to kill from five to fifty people.



Length 3–4½ft (1–1.4m)	Diet	Activity

Family ELAPIDAE	Species *Hemachatus haemachatus*	Status Common

RINKHALS ☠

A variably patterned cobra, the Rinkhals may be uniform black or brown, speckled, or banded black and cream. It usually has a black throat. Characteristics that distinguish this southern African spitting cobra from other African cobras include its short, angular head, strongly keeled dorsal scales, and the fact that it is live-bearing (other cobras have more rounded heads, their bodies are smooth-scaled, and they lay eggs). When confronted, the Rinkhals spits venom into the face of its enemy before fleeing. If trapped, it may deter predators by shamming death in the manner of hognose snakes (*Heterodon* species, p.138) or Grass Snakes (*Natrix natrix*, p.148). All of these species "play dead" by rolling onto their backs and opening their mouths. Toads are the preferred diet of the Rinkhals.

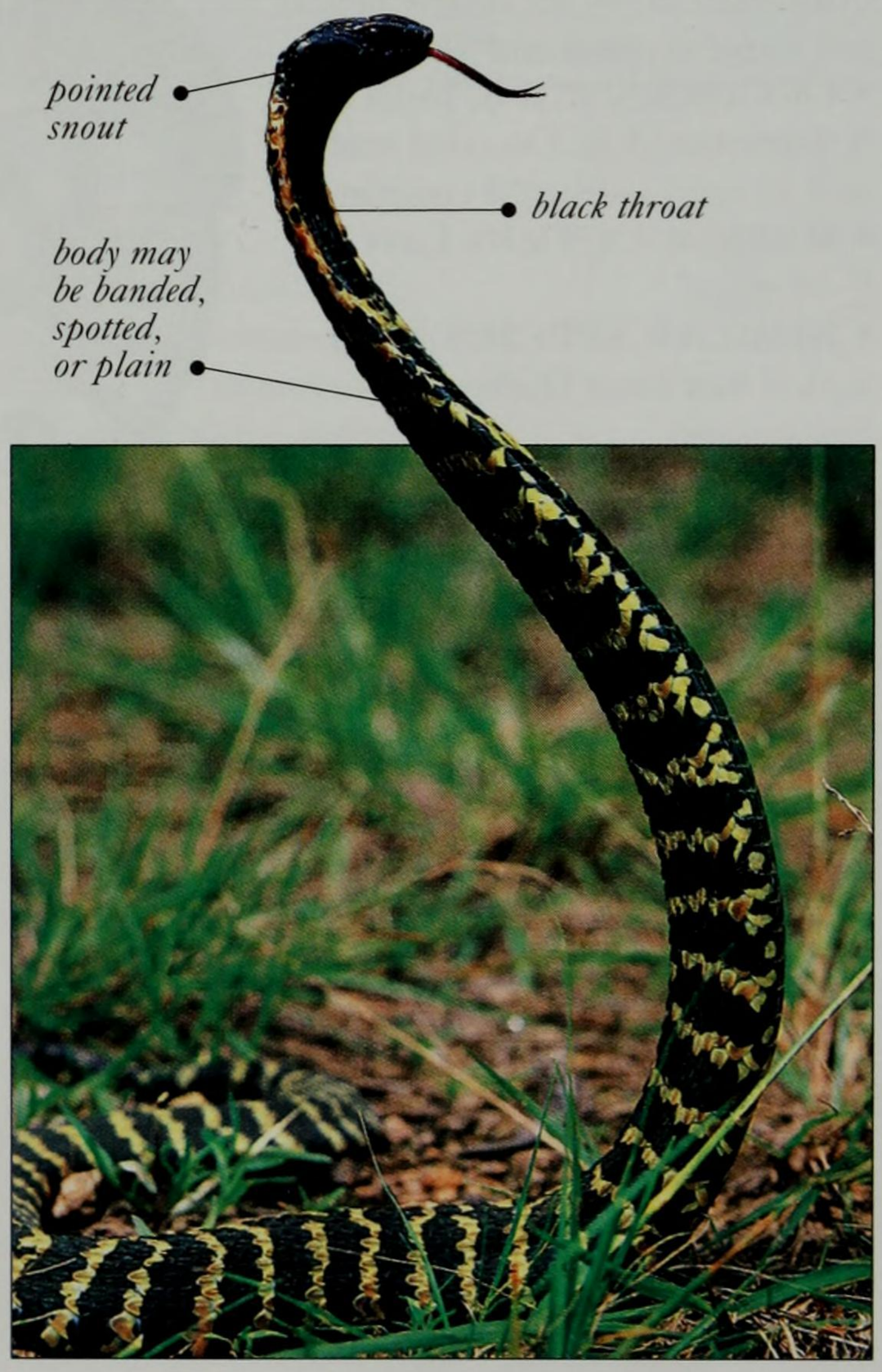
• **OCCURRENCE** South Africa. In grassland.

• **REPRODUCTION** Live-bearing, 20–60 neonates.



AFRICA

• **REMARK** The Rinkhals is believed to possess the most well-developed fangs for spitting of all the cobra species.



Length 3–5ft (1–1.5m)	Diet	Activity

Family ELAPIDAE	Species *Lapemis curtus*	Status Locally common

SHORT SEA SNAKE ☠

This species is a stout-bodied, large-headed, light brown sea snake with a lengthwise row of large brown blotches. It is also known as the Spine-bellied Sea Snake because in the male the keeled scales on the underside have short spines. An inshore species, it is probably the second most dangerous sea snake to humans after the Common Beaked Sea Snake (*Enhydrina schistosa*, p.161).



INDIAN & PACIFIC OCEANS

• **OCCURRENCE** Persian Gulf to Australia and S. Japan. In estuaries and on coral reefs.
• **REPRODUCTION** Live-bearing, 1–6 neonates.
• **SIMILAR SPECIES** Reef Sea Snake (*Hydrophis ornatus*).



Length 3–3½ft (0.9–1.1m)	Diet	Activity ☼ ☾

Family ELAPIDAE	Species *Laticauda colubrina*	Status Common

YELLOW-LIPPED SEA KRAIT ☠

The black-and-blue bands are typical of sea kraits, but this species is distinguished by its yellow lips. It can move on land and in water.
• **OCCURRENCE** E. India to S. Japan and Fiji. On coral reefs and mangrove-fringed coastlines.
• **REPRODUCTION** Lays 6–18 eggs.
• **SIMILAR SPECIES** Large-scaled Sea Krait (*Laticauda laticaudata*).



INDIAN & PACIFIC OCEANS

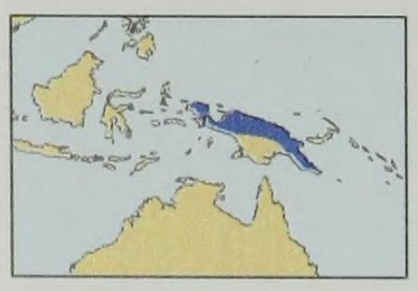


Length 3–6½ft (1–2m)	Diet	Activity ☾

Family ELAPIDAE	Species *Micropechis ikaheka*	Status Locally common

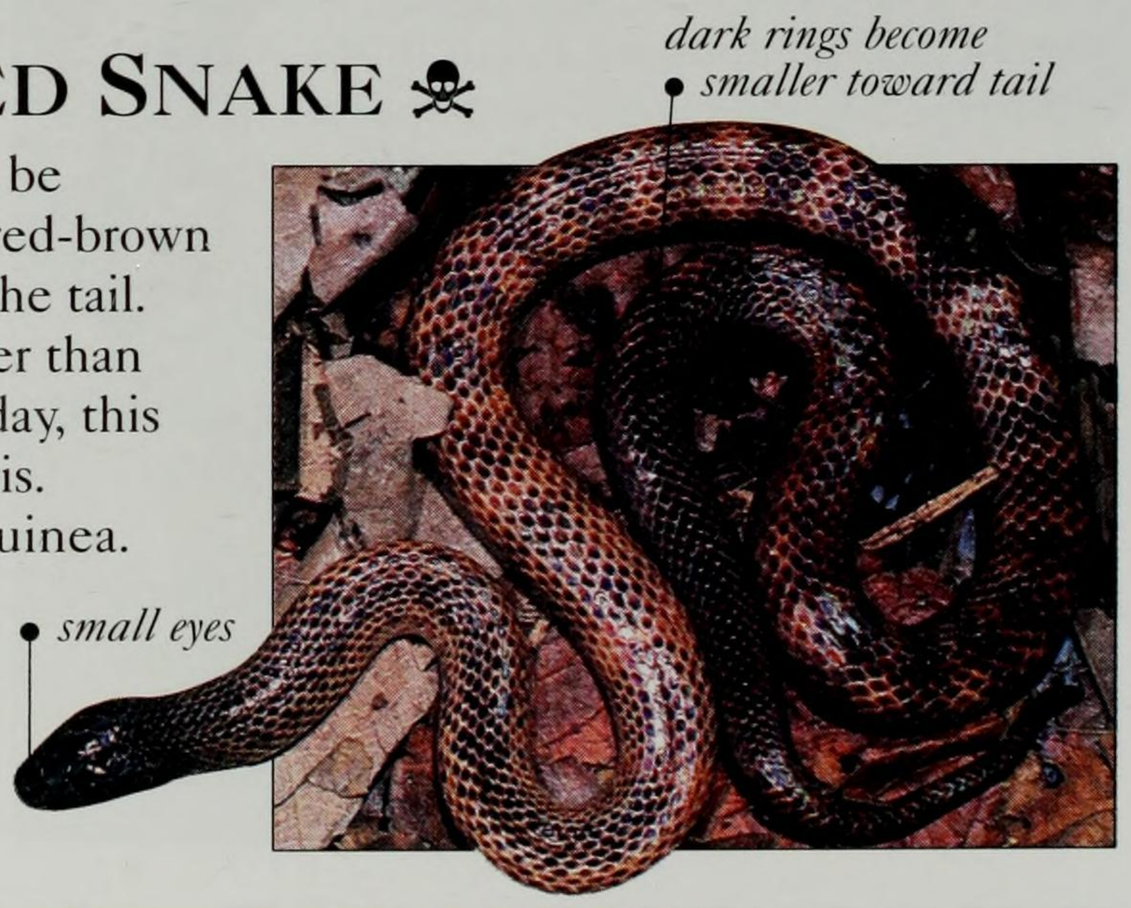
NEW GUINEA SMALL-EYED SNAKE ☠

The patterning of this smooth-scaled snake may be brown, cream, or white, with dark-edged, red or red-brown rings that increase in size and frequency toward the tail. The front part of the body may be speckled rather than ringed. The head is gray and the eyes small. By day, this snake hides in coconut husk piles and other debris.



NEW GUINEA

• **OCCURRENCE** New Guinea. In wet forests, swamps, and on plantations.
• **REPRODUCTION** Lays eggs (clutch size unknown).



Length 3–6½ft (1–2m)	Diet	Activity ☾

Family ELAPIDAE	Species *Micruroides euryxanthus*	Status Rare

WESTERN CORALSNAKE ☠



N. AMERICA

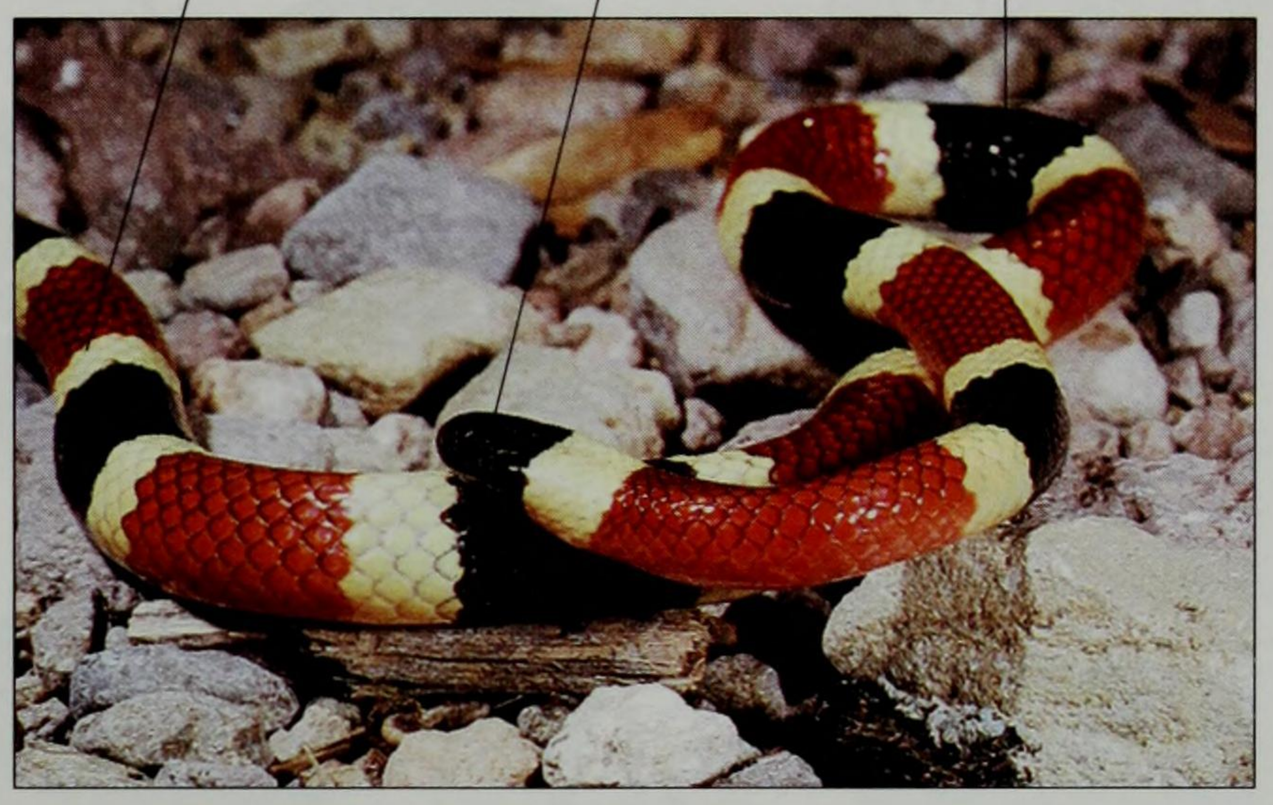
One of the smallest coralsnakes, this smooth-scaled species is banded with red, white or yellow, and black. It is a very secretive burrowing snake, rarely encountered on the surface. If disturbed, it will raise its tail in an elevated figure-eight, exposing the underside, in the manner of coralsnakes of the genus *Micrurus* (below and p.164). Its prey includes small snakes, such as the Texas Blindsnake (*Leptotyphlops dulcis*, p.105) and ringneck snakes (*Diadophis* species), as well as skinks.

• **OCCURRENCE** S.W. US and N.W. Mexico. In arid habitats including desert, savanna, dry woodland, and river bottoms.

• **REPRODUCTION** Lays 1–3 eggs.

• **SIMILAR SPECIES** Ground snakes (*Sonora* species), shovel-nosed snakes (*Chionactis* species).

• **REMARK** This is the only coralsnake in S.W. US and N.W. Mexico.



Length 16–21½in (40–55cm)	Diet	Activity ☾

Family ELAPIDAE	Species *Micrurus alleni*	Status Rare

ALLEN'S CORALSNAKE ☠



C. AMERICA

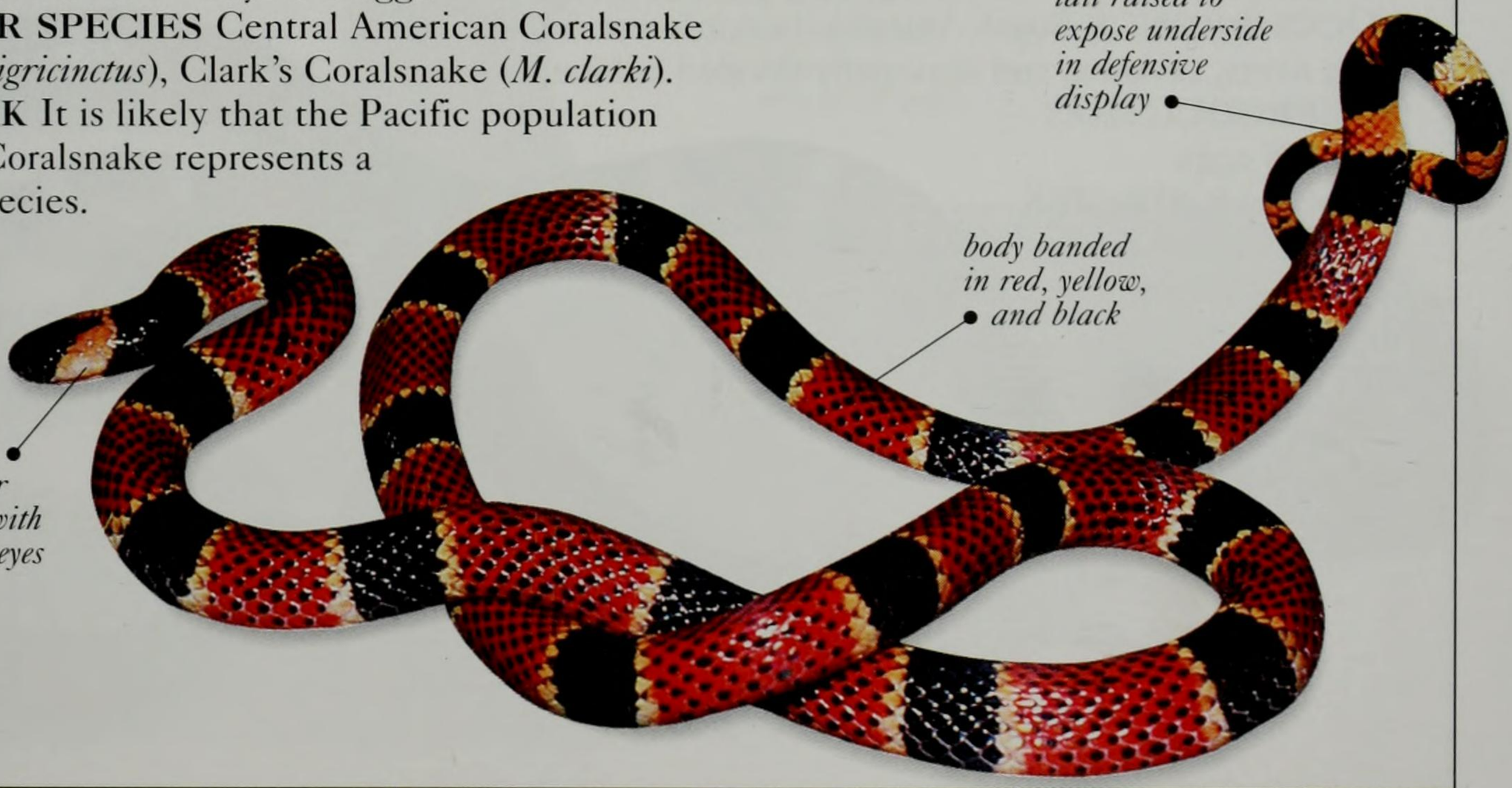
A small to medium-sized Central American species, Allen's Coralsnake is orange-red, patterned with red, yellow, and black bands. The black-and-yellow head and the eyes are small. These coralsnakes are highly venomous but very secretive. Encounters with humans are rare, and bites are unlikely due to the small size of the snakes' mouths.

• **OCCURRENCE** Nicaragua and Costa Rica. In lowland rainforest.

• **REPRODUCTION** Lays 2–3 eggs.

• **SIMILAR SPECIES** Central American Coralsnake (*Micrurus nigricinctus*), Clark's Coralsnake (*M. clarki*).

• **REMARK** It is likely that the Pacific population of Allen's Coralsnake represents a separate species.



Length 2½–3½ft (0.8–1.1m)	Diet	Activity ☾

Family ELAPIDAE	Species *Micrurus fulvius*	Status Common

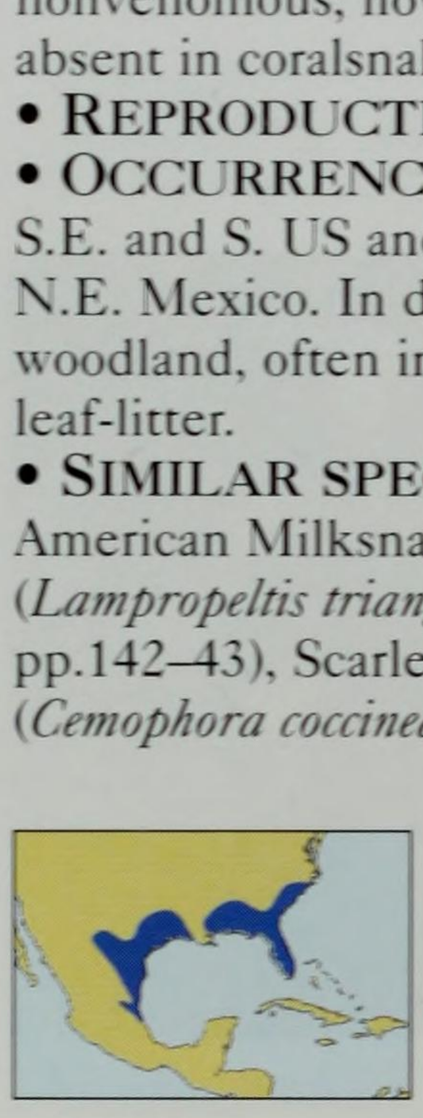
EASTERN CORALSNAKE ☠

The highly venomous Eastern Coralsnake is small and slender, with a rounded head, small eyes, and red, yellow, and black bands. It may be difficult to distinguish from tricolored colubrid snakes, which are nonvenomous; however, colubrids possess a loreal scale, which is absent in coralsnakes and other elapids. It eats mostly snakes.

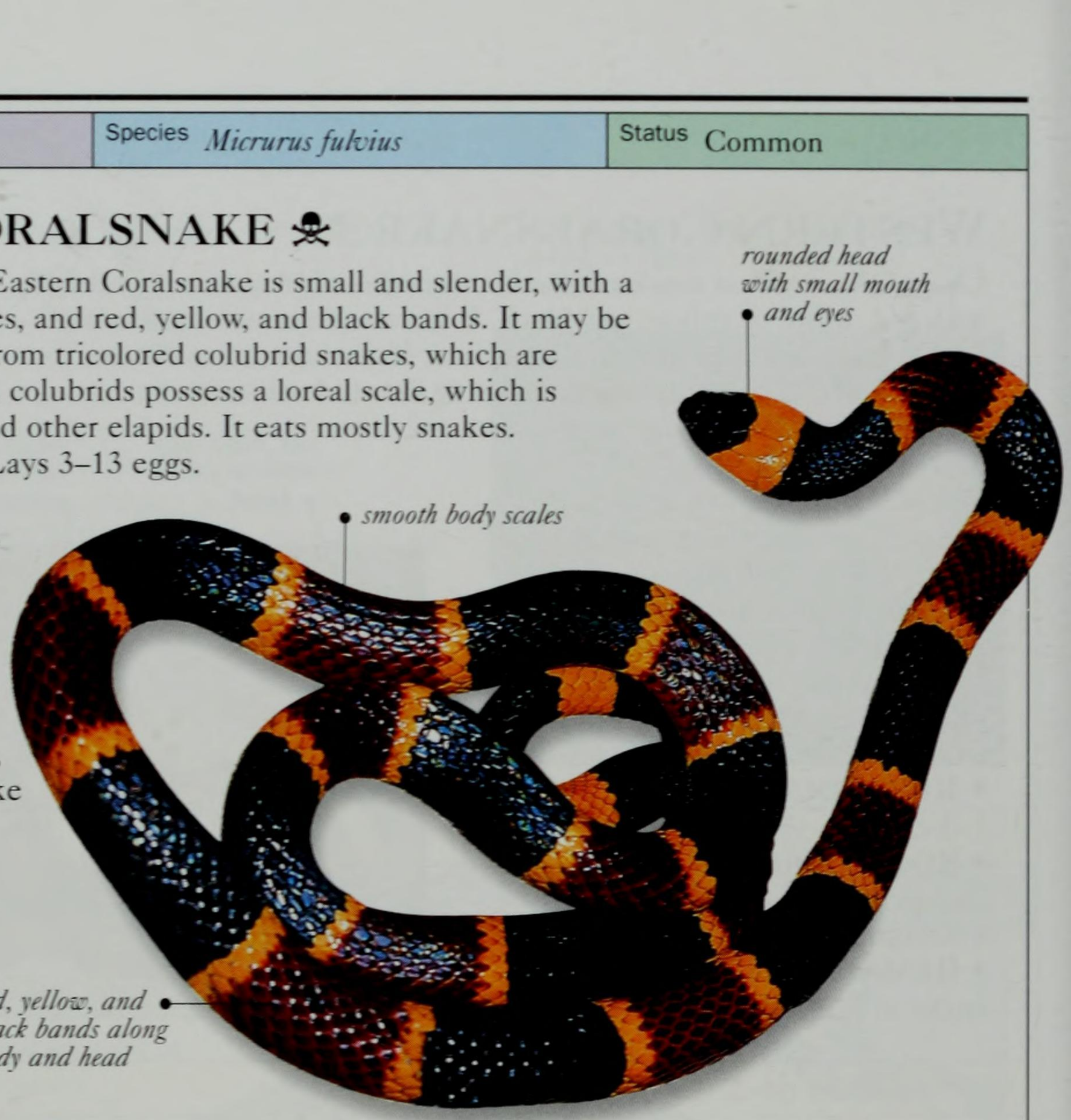
• REPRODUCTION Lays 3–13 eggs.

• OCCURRENCE S.E. and S. US and N.E. Mexico. In dry woodland, often in leaf-litter.

• SIMILAR SPECIES American Milksnake (*Lampropeltis triangulum*, pp.142–43), Scarlet Snake (*Cemophora coccinea*).



N. AMERICA



Length 2–3ft (0.7–1m)	Diet	Activity

Family ELAPIDAE	Species *Micrurus lemniscatus*	Status Common

SOUTH AMERICAN CORALSNAKE ☠

This slender, highly venomous elapid has a rounded head with small eyes. It is similar to the Eastern Coralsnake (*Micrurus fulvius*, above), but the bands of the South American Coralsnake are in a different order and are arranged in "triads," with three black bands, separated by two white bands, on a red background.

• OCCURRENCE South America. In rainforest, forest along rivers, savanna, and seasonally flooded habitats.

• REPRODUCTION Lays 5–6 eggs.

• SIMILAR SPECIES Aquatic Coralsnake (*M. surinamensis*), Slender Coralsnake (*M. filiformis*).



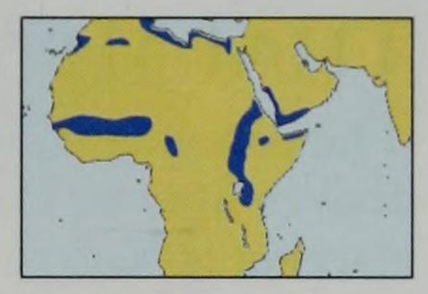
S. AMERICA



Length 2–4½ft (0.7–1.4m)	Diet	Activity

Family ELAPIDAE	Species *Naja haje*	Status Common

EGYPTIAN COBRA ☠



AFRICA, MIDDLE EAST

This is a large, stout-bodied cobra, with a rounded head and smooth scales. It is highly venomous. The rostral scale is small, unlike that of the similar Snouted Cobra (*Naja annulifera*) of southern Africa, a former subspecies, which has an enlarged rostral scale. Three subspecies of *Naja haje* may be recognized: the Egyptian Cobra (*N. haje haje*, shown here), which varies from yellow-gray to brown; the Moroccan population (*N. haje legionis*), which is almost jet-black; and *N. haje arabica*, which is often yellow with a black head and neck, and occurs in the southern Arabian Peninsula (this is the only African cobra found outside the continent). When defensive, this species rears one-third of its length vertically and spreads a broad, rounded hood. If this threat is ignored, the cobra will advance toward the aggressor and, if the aggressor persists, it may eventually strike. Prey includes other snakes, toads, small mammals, and birds' eggs.

• **OCCURRENCE** N. Africa, around the Sahara Desert, and the Arabian Peninsula (*N. haje arabica* only). In savanna, dry woodland, and semidesert.

• **REPRODUCTION** Lays 10–20 eggs.

• **SIMILAR SPECIES** Snouted Cobra (*N. annulifera*).

fang sheaths (skin covering fangs) on display when cobra opens mouth

glottis (airway) visible when mouth open

broad, long hood spreads in defense

enlarged ventral scales typical of terrestrial snake

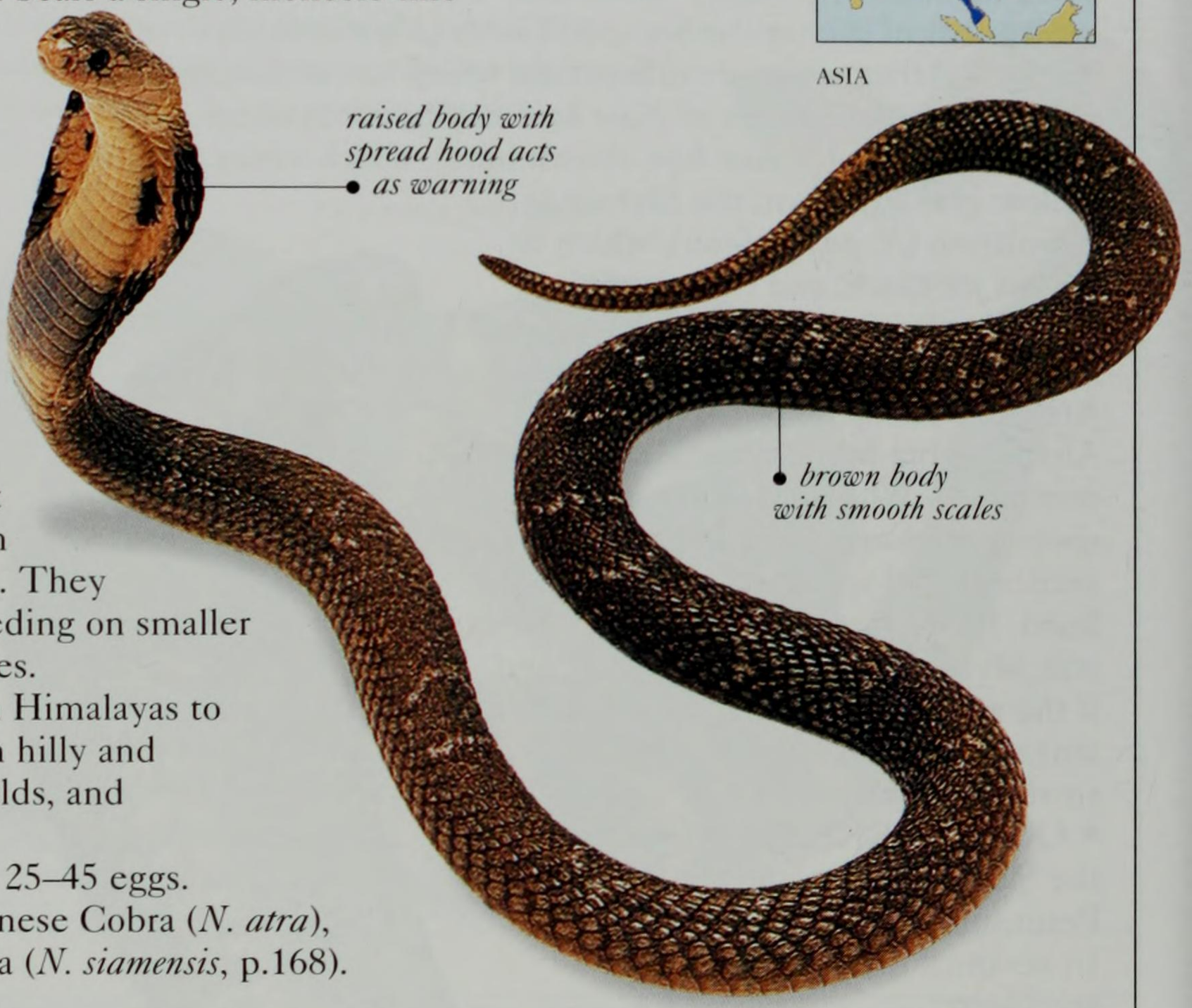
smooth, uniform brown body scales

Length 5–8ft (1.5–2.4m)	Diet	Activity

Family ELAPIDAE	Species *Naja kaouthia*	Status Common

THAI MONOCULATE COBRA ☠

The common name of this highly venomous cobra derives from its hood, which bears a single, monocle-like marking rather than the "spectacle" marking of the Indian Spectacled Cobra (*Naja naja*, below). The Thai Monoculate Cobra is the common cobra of Southeast Asia. It warns off enemies by spreading the flexible ribs of its neck into the distinctive round hood but, like most other cobras, it does not spit venom. Asian cobras feed on rats, toads, and other snakes. They can also be cannibalistic, feeding on smaller members of their own species.





ASIA

• **OCCURRENCE** Eastern Himalayas to S. Thailand and Vietnam. In hilly and lowland woodland, paddyfields, and around human habitations.

• **REPRODUCTION** Lays 25–45 eggs.

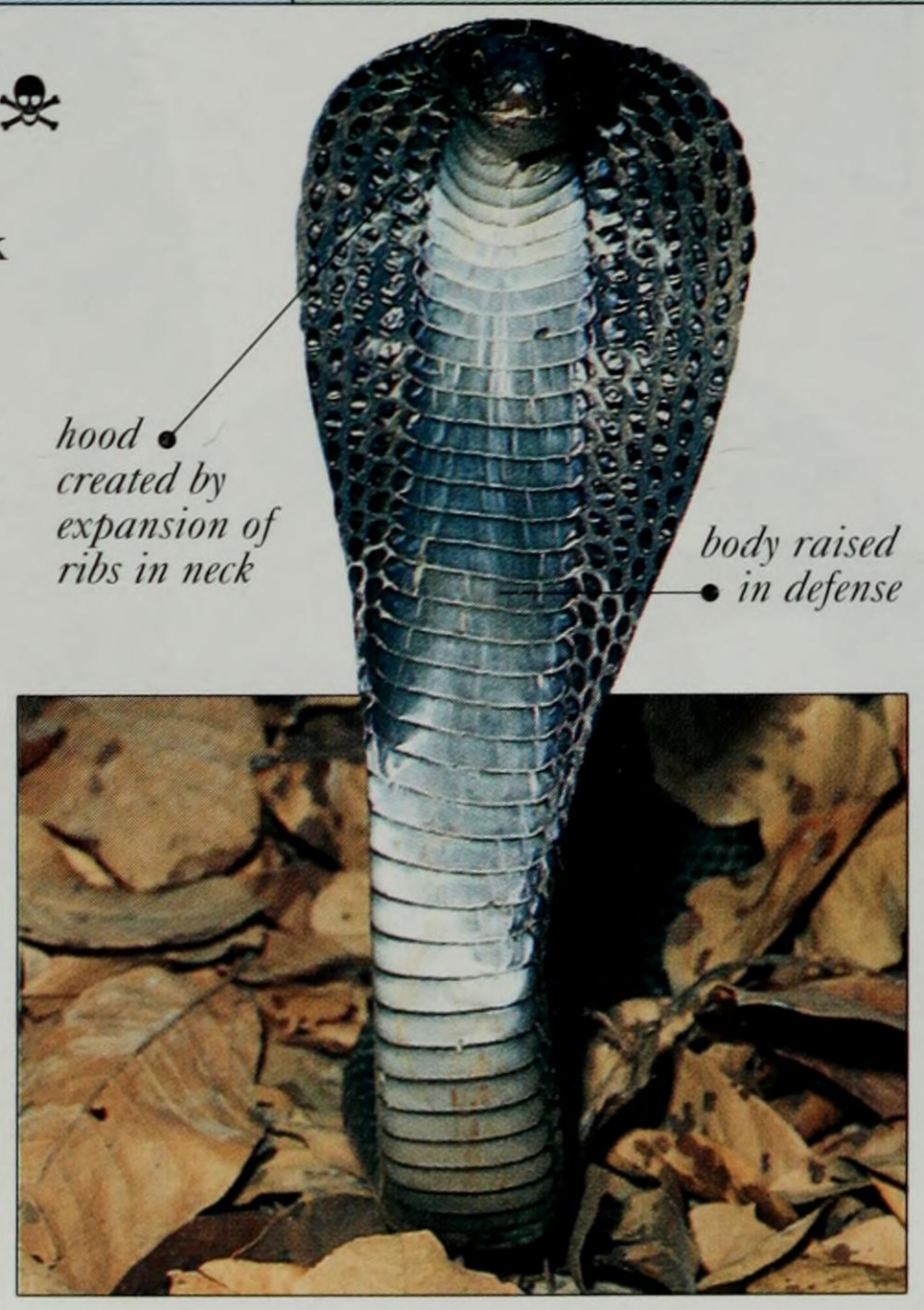
• **SIMILAR SPECIES** Chinese Cobra (*N. atra*), Indo-Chinese Spitting Cobra (*N. siamensis*, p.168).

Length 5–6½ft (1.5–2m)	Diet	Activity

Family ELAPIDAE	Species *Naja naja*	Status Endangered

INDIAN SPECTACLED COBRA ☠

This is a fairly variable species, but most specimens bear the characteristic "spectacle" marking on the back of the hood. Coloration is often plain brown, but Nepalese specimens (shown here) are jet-black, with all markings obscured, and Sri Lankan ones are brown, with cream-colored speckling and a double spectacle marking. Indian Spectacled Cobras do not spit venom, but they are a major snakebite risk. They are threatened in the wild and receive protection in India.



• **OCCURRENCE** Southern Himalayas to Sri Lanka. In hilly and lowland woodland, paddyfields, and around human habitations.

• **REPRODUCTION** Lays 10–30 eggs.

• **SIMILAR SPECIES** Thai Monoculate Cobra (*Naja kaouthia*, above), Trans-Caspian Cobra (*N. oxiana*).

• **REMARK** This is the famous cobra used by Indian snake charmers; it is revered by Buddhists and Hindus.



ASIA

Length 4–5½ft (1.2–1.7m)	Diet	Activity

Family ELAPIDAE	Species *Naja nivea*	Status Locally common

CAPE COBRA ☠

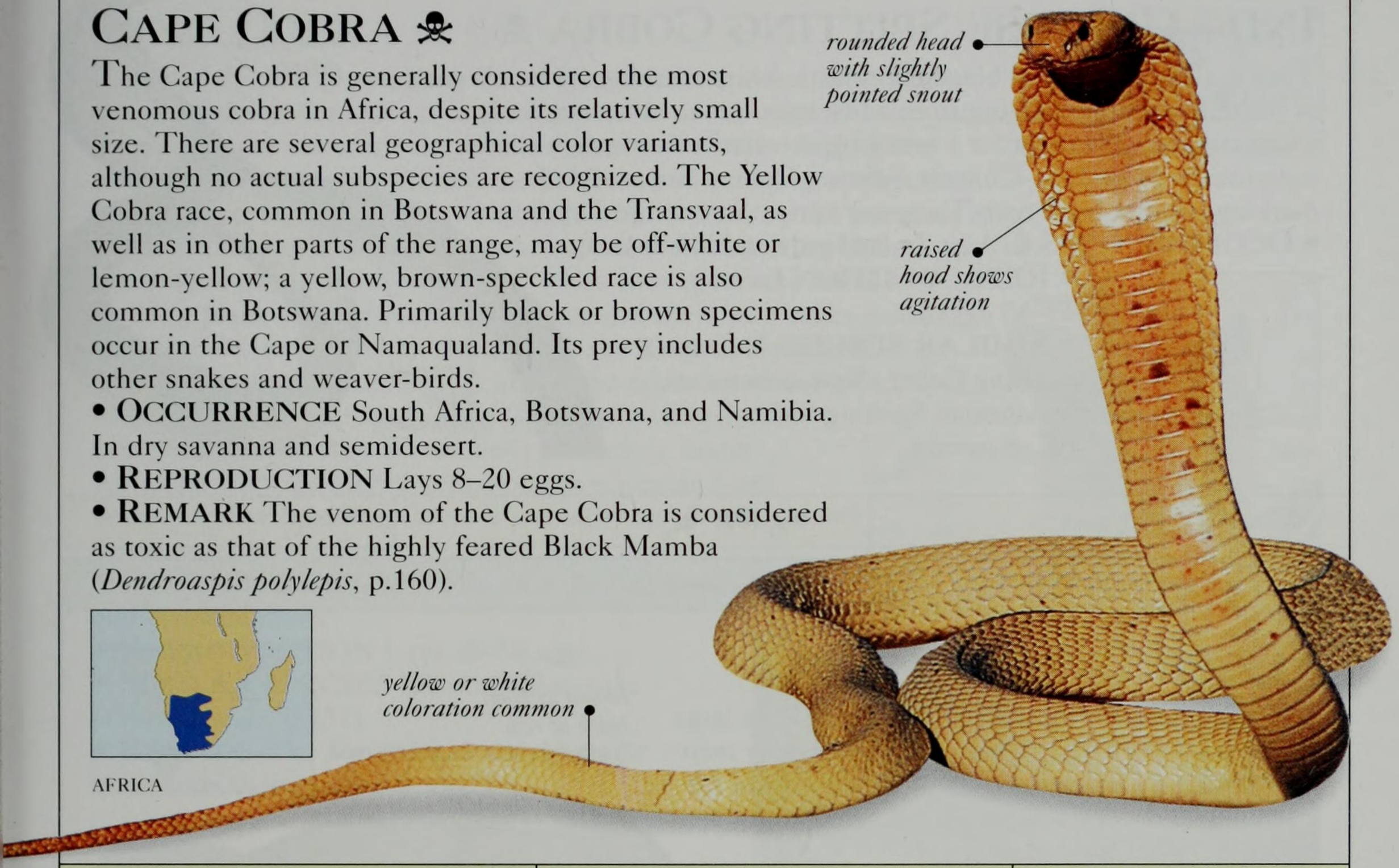
The Cape Cobra is generally considered the most venomous cobra in Africa, despite its relatively small size. There are several geographical color variants, although no actual subspecies are recognized. The Yellow Cobra race, common in Botswana and the Transvaal, as well as in other parts of the range, may be off-white or lemon-yellow; a yellow, brown-speckled race is also common in Botswana. Primarily black or brown specimens occur in the Cape or Namaqualand. Its prey includes other snakes and weaver-birds.

• **OCCURRENCE** South Africa, Botswana, and Namibia. In dry savanna and semidesert.

• **REPRODUCTION** Lays 8–20 eggs.

• **REMARK** The venom of the Cape Cobra is considered as toxic as that of the highly feared Black Mamba (*Dendroaspis polylepis*, p.160).

AFRICA



Length 4–5½ft (1.2–1.7m)	Diet	Activity

Family ELAPIDAE	Species *Naja pallida*	Status Locally common

RED SPITTING COBRA ☠

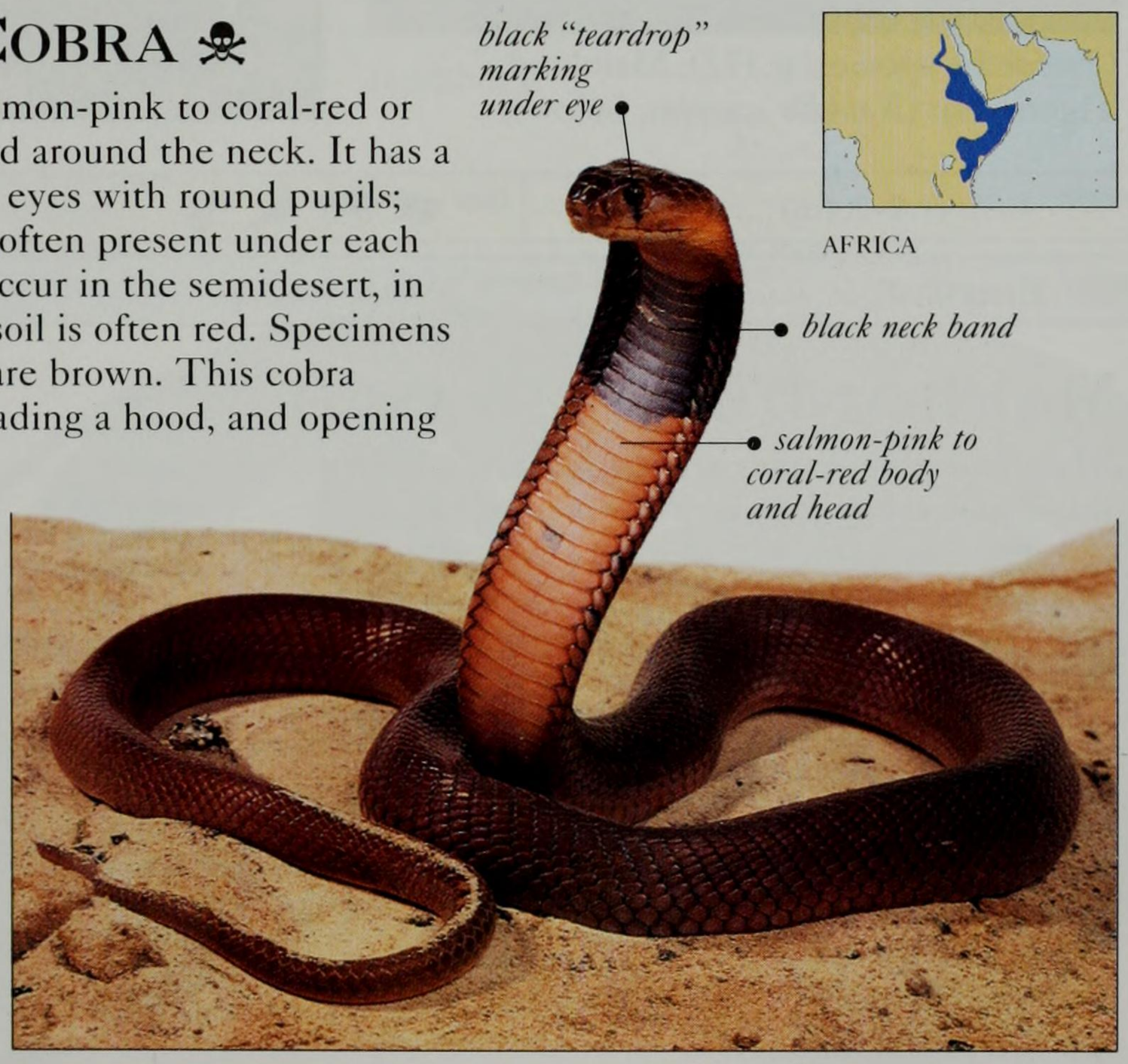
The Red Spitting Cobra is salmon-pink to coral-red or brown, with a broad black band around the neck. It has a small, rounded head and large eyes with round pupils; a black "teardrop" marking is often present under each eye. The reddest specimens occur in the semidesert, in Kenya and Sudan, where the soil is often red. Specimens from further north, in Egypt, are brown. This cobra defends itself by rearing, spreading a hood, and opening its mouth slightly while it sends a twin-jet of venom into the face of its aggressor over a distance of 3–6½ft (1–2m).

• **OCCURRENCE** E. Africa. In dry savanna and semi-desert.

• **REPRODUCTION** Lays 6–15 eggs.

• **SIMILAR SPECIES** West African Brown Spitting Cobra (*Naja katiensis*).

AFRICA



Length 24–30in (60–75cm)	Diet	Activity

Family ELAPIDAE	Species *Naja siamensis*	Status Common

INDO-CHINESE SPITTING COBRA ☠

This is a gray, brown, or black cobra with white markings. The extent of white is variable, ranging from a few speckles to almost entirely white coloration (except for a broad black vertebral stripe) in some individuals. Most Indo-Chinese Spitting Cobras possess white markings on the hood rear. They spit venom in enemies' eyes.

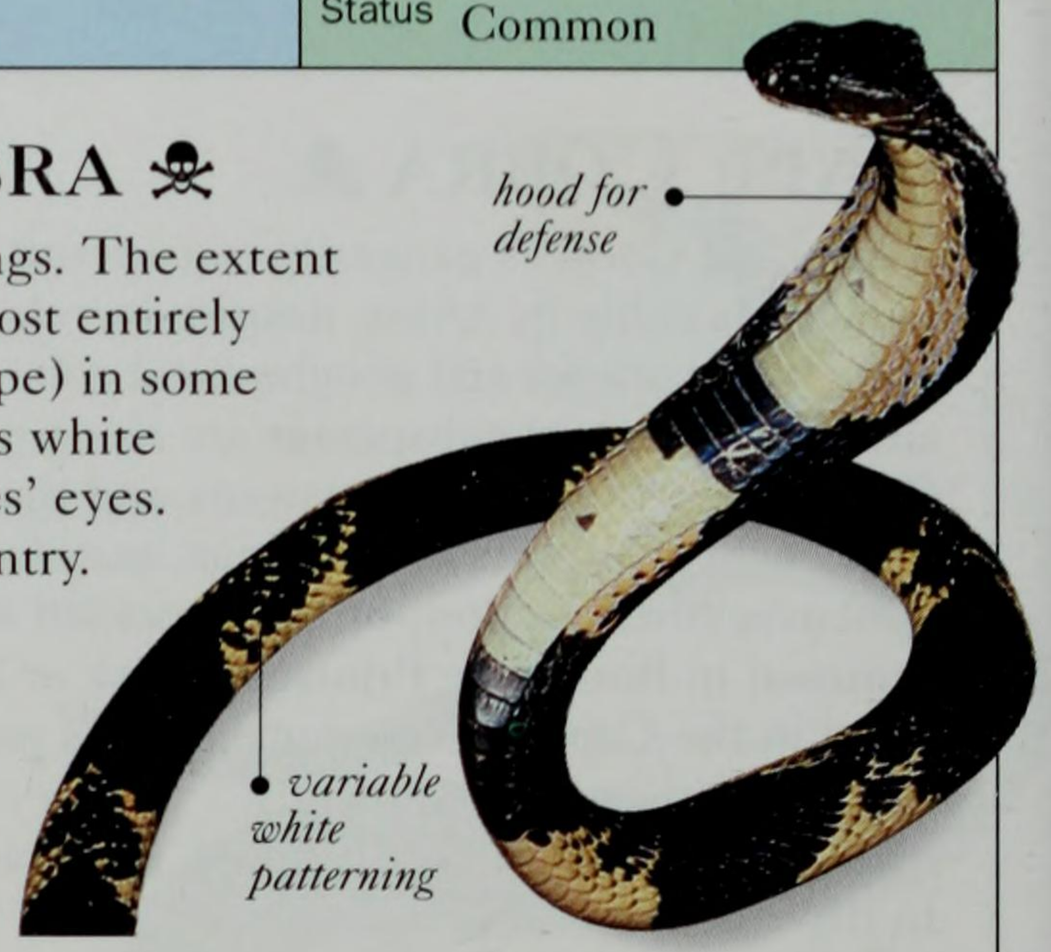
• **OCCURRENCE** S.E. Asia. In lowlands and hill country.



ASIA

• **REPRODUCTION** Lays 13–19 eggs.

• **SIMILAR SPECIES** Equatorial Spitting Cobra (*Naja sumatrana*), Indonesian Spitting Cobra (*N. sputatrix*).



Length 4–5ft (1.2–1.6m)	Diet	Activity

Family ELAPIDAE	Species *Notechis ater*	Status Common

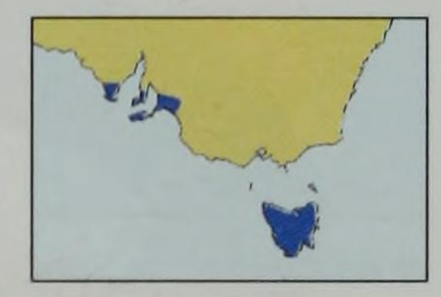
BLACK TIGERSNAKE ☠

This is a generally stout-bodied snake with a large head, small eyes, and smooth, glossy black or matt-brown scales. Dark coloration helps it to warm up quickly in the cool climates in which it lives. Some juveniles have cross-bands.

• **OCCURRENCE** S.E. Australia. In marshland, dry coastal grassland, and rocky islands.

• **REPRODUCTION** Live-bearing, 6–100 neonates.

• **SIMILAR SPECIES** Blacksnakes (*Pseudechis* species, p.172), Mainland Tigersnake (*Notechis scutatus*, below).



AUSTRALIA



Length 4–8ft (1.2–2.4m)	Diet	Activity

Family ELAPIDAE	Species *Notechis scutatus*	Status Common

MAINLAND TIGERSNAKE ☠

Mainland Tigersnakes are matt-black or brown above and yellow below, with fine yellow bars extending upward. The head is glossy and rounded, with small eyes. These snakes flatten their necks as a warning prior to striking.

• **OCCURRENCE** S.E. and S.W. Australia. In rainforest, flooded river valleys, swamps, and near human habitations.

• **REPRODUCTION** Live-bearing, 10–90 neonates.

• **SIMILAR SPECIES** Black Tigersnake (*Notechis ater*, above), copperheads (*Austrelaps* species, p.158).



AUSTRALIA



Length 4–7ft (1.2–2.1m)	Diet	Activity

Family ELAPIDAE	Species *Ophiophagus hannah*	Status Locally common

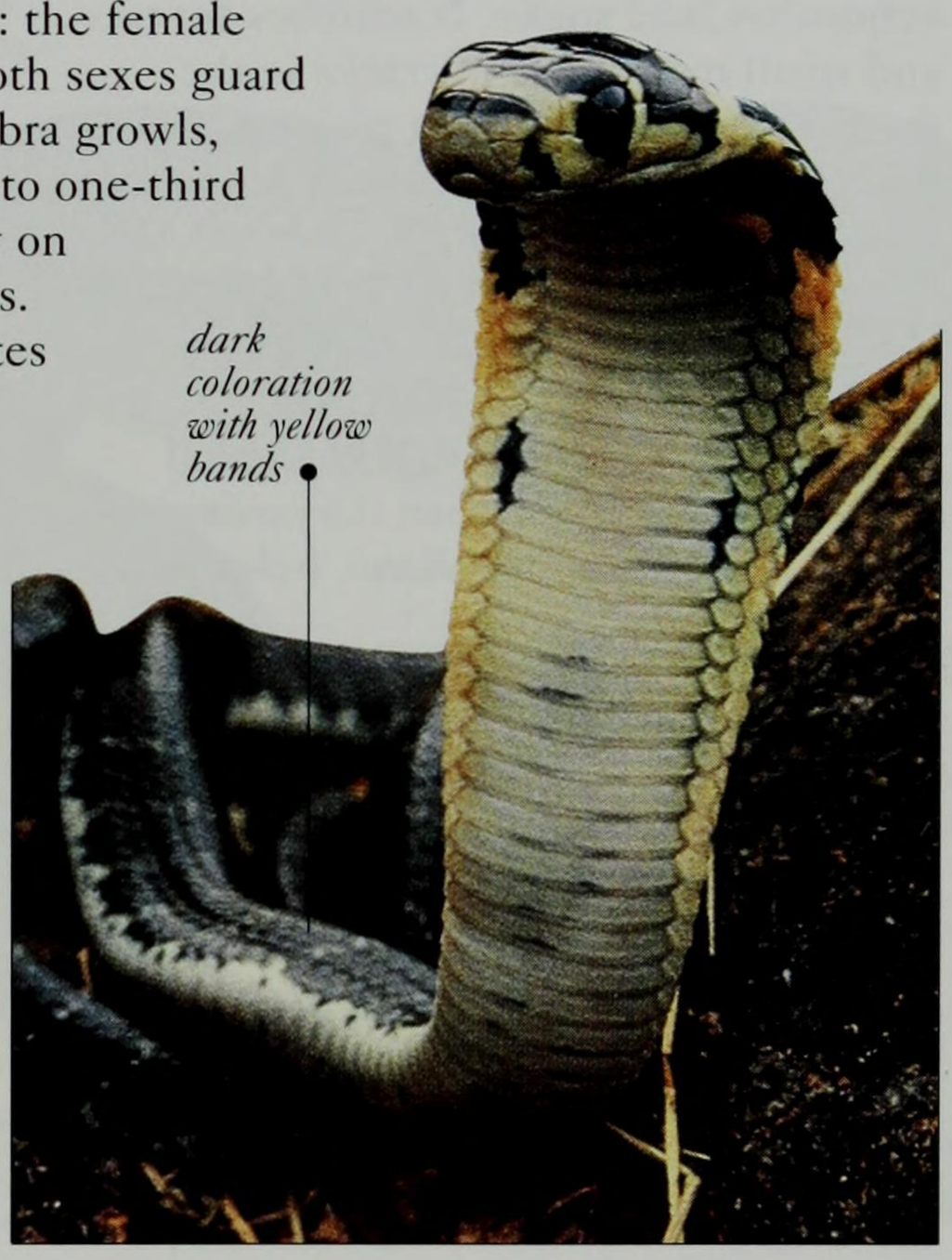
KING COBRA ☠

The widely distributed King Cobra is a variable species, with adults ranging from yellow-brown to gray-green. Juveniles are dark with yellow bands and a series of inverted yellow chevrons on the long, narrow hood. Some populations retain the juvenile patterning into adulthood. King Cobras can be distinguished from other cobras by the presence of a pair of post-occipital scales on the rear of the head. King Cobras are unique because they "pair up" when they mate: the female builds a plant-debris nest for their eggs and then both sexes guard the clutch together. When threatened, the King Cobra growls, shows a single fang, flattens its hood, and raises up to one-third of its body off the ground. King Cobras prey mostly on other snakes, but they occasionally eat rats or lizards. Although they are highly venomous, few human bites occur because the King Cobra is primarily an inhabitant of deep forest.



ASIA

- **OCCURRENCE** S. and S.E. Asia. In forest and on plantations.
- **REPRODUCTION** Lays 20–50 eggs.
- **SIMILAR SPECIES** Dharman Ratsnake (*Ptyas mucosus*, p.151).
- **REMARK** The King Cobra is the longest venomous snake in the world.



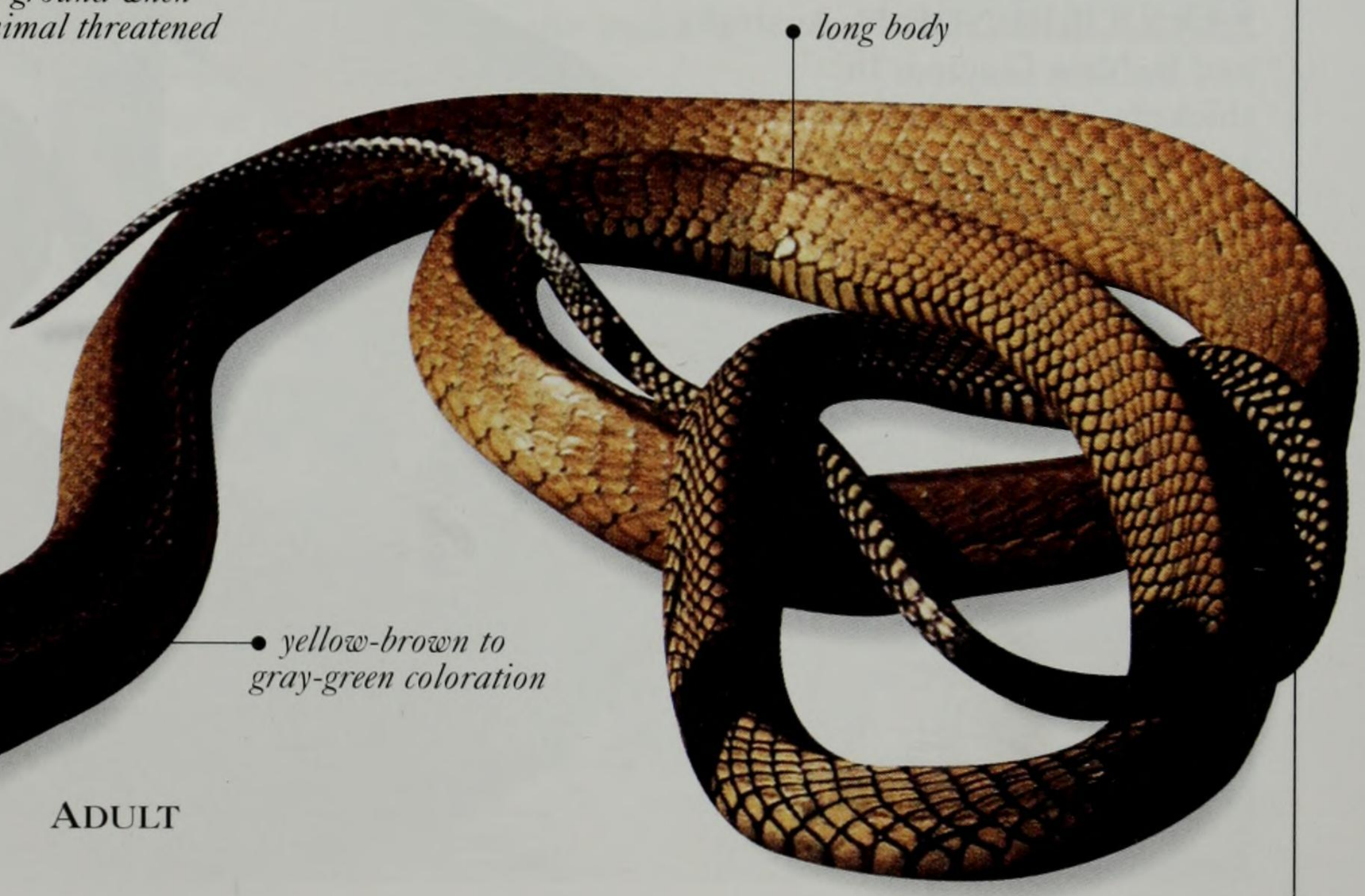
dark coloration with yellow bands

JUVENILE



long, narrow hood flattens out when cobra threatened

front of body rears off ground when animal threatened



long body

yellow-brown to gray-green coloration

ADULT

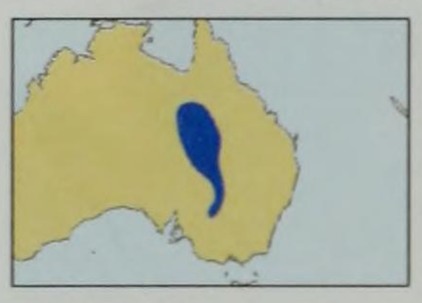
Length 10–16½ft (3–5m)	Diet	Activity

Family ELAPIDAE	Species *Oxyuranus microlepidotus*	Status Locally common

INLAND TAIPAN ☠

Also known as the Small-scaled Snake, the Inland Taipan has gray to yellow-brown scales, which may have fine black edges. The head is slightly pointed and the eyes are relatively large. This is a shy species – but it is also the world's most venomous land snake. It searches for rats and small marsupials in cracks in the deep, drying mud of river plains.

• **OCCURRENCE** E. central Australia. In dry river floodplains.



AUSTRALIA

• **REPRODUCTION** Lays 12–20 eggs.

• **SIMILAR SPECIES** Coastal Taipan (*Oxyuranus scutellatus*, below).



Length 6½–8ft (2–2.5m)	Diet	Activity

Family ELAPIDAE	Species *Oxyuranus scutellatus*	Status Locally common

COASTAL TAIPAN ☠

The Australian Taipan (*Oxyuranus scutellatus scutellatus*, shown here), one of two subspecies, is usually brown, and sometimes has a pale head. The New Guinea Taipan (*O. scutellatus canni*) may be brown, with a broad orange vertebral stripe, or jet-black. Both have a long, slender, coffin-shaped head, and large eyes under overhanging scales give the snake a scowling expression. The Coastal Taipan is a fast-moving predator of mammals. It is also a highly venomous snake easily capable of causing human fatalities.

• **OCCURRENCE** N. Australia and S. New Guinea. In thickets, sugar cane fields, and wooded savanna.

• **REPRODUCTION** Lays 3–22 eggs.

• **SIMILAR SPECIES** Inland Taipan (*O. microlepidotus*, above).

• **REMARK** This snake is the primary cause of snakebite death in S. New Guinea.



AUSTRALASIA



Length 6½–12ft (2–3.6m)	Diet	Activity

Family ELAPIDAE	Species *Paranaja multifasciata*	Status Rare

BURROWING COBRA ☠

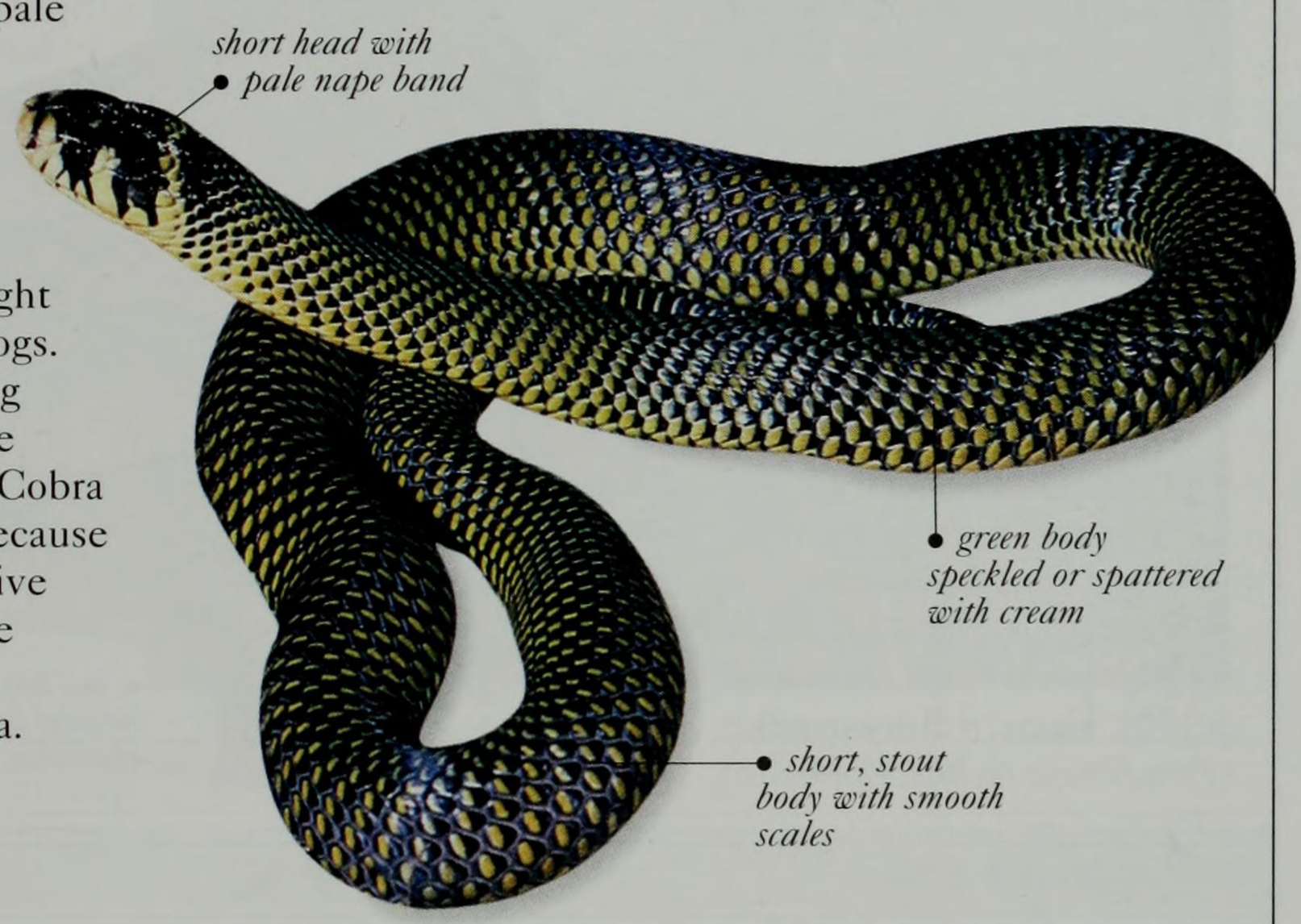


AFRICA

Each smooth scale of the Burrowing Cobra's short, stout green body is cream with a green or black spot or edge, resulting in a reticulated or spotted pattern. In some adults, the patterning may resemble that of the Forest Cobra (*Naja melanoleuca*). The underside is immaculate cream. The short head is dark with a pale cross-band on the nape and pale bars around the large eyes. Adults may be darker than juveniles. This is a little-known rainforest species that is thought to be active in daylight and to feed on lizards and frogs. It is believed to be burrowing or to live in leaf-litter. Unlike other cobras, the Burrowing Cobra does not have a hood and, because of its small size and inoffensive nature, it is not thought to be dangerous to humans.

• **OCCURRENCE** C. Africa. In rainforest.

• **REPRODUCTION** Lays 20–60 eggs.



Length 20–31in (50–80cm)	Diet	Activity

Family ELAPIDAE	Species *Pelamis platurus*	Status Locally common

PELAGIC SEA SNAKE ☠



INDIAN & PACIFIC OCEANS

With its yellow-and-black body and black-spotted yellow, paddlelike tail, this is the most recognizable marine snake. It is also known as the Yellow-and-Black Sea Snake. The colors warn sharks that the snake is venomous, deterring attack. This is the world's most widely distributed snake; it may also be the most numerous, with thousands drifting together in midocean. Perfectly adapted for sea life, it has glands to excrete salt under its tongue. To rid itself of external parasites it twists and coils in the sea, and sloughs its skin more frequently than terrestrial snakes. Its scales butt up against each other, limiting the number of anchorage sites for parasites.

• **OCCURRENCE** Indian and Pacific Oceans. In open ocean at the surface.

• **REPRODUCTION** Live-bearing, 2–6 neonates.



Length 3–5ft (1–1.5m)	Diet	Activity

Family ELAPIDAE	Species *Pseudechis australis*	Status Locally common

KING BROWNSNAKE ☠



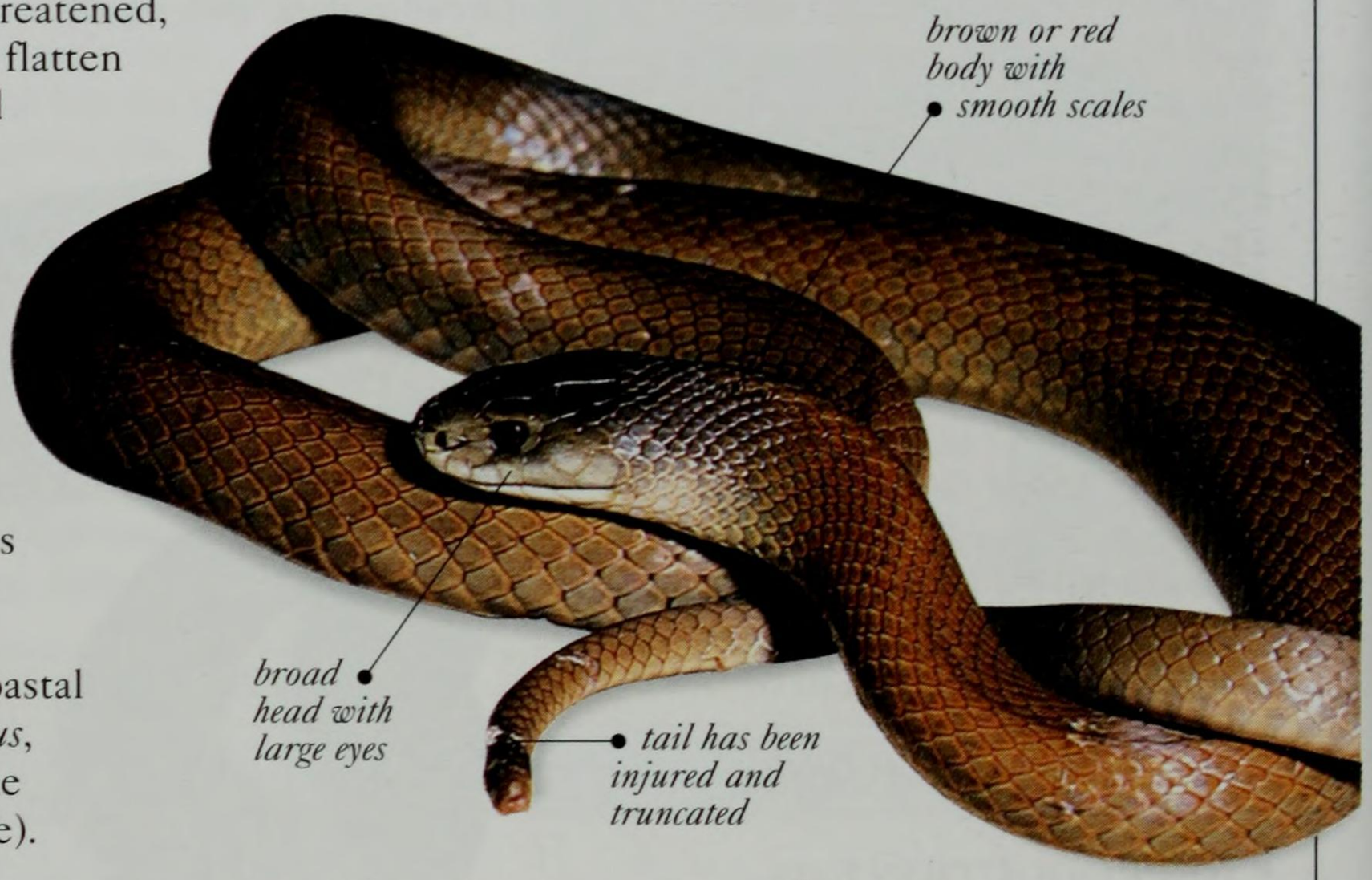
AUSTRALASIA

Australia's most widespread venomous snake, the King Brownsnake has a brown or red body, with smooth scales, and a broad head with large eyes. It has also been reported in southern New Guinea, but recent research suggests that the New Guinea snake may in fact be a new species. When threatened, the King Brownsnake may flatten its neck into a narrow hood and raise its body in preparation to strike.

• **OCCURRENCE** Australia (excluding the south) and S. New Guinea. In a wide range of habitats, from tropical forest to desert.

• **REPRODUCTION** Lays 11–16 eggs or may be live-bearing, 18–22 neonates.

• **SIMILAR SPECIES** Coastal Taipan (*Oxyuranus scutellatus*, p.170), Eastern Brownsnake (*Pseudonaja textilis*, opposite).



Length 5–9ft (1.5–2.7m)	Diet	Activity

Family ELAPIDAE	Species *Pseudechis porphyriacus*	Status Locally common

RED-BELLIED BLACKSNAKE ☠



AUSTRALIA

Glossy black above and bright red below, the Red-bellied Blacksnake has a rounded head with relatively large eyes. Preferring aquatic habitats, it is found in swamps and on riverbanks that have a ready supply of frogs, although it may also eat small mammals, lizards, and other snakes.

• **OCCURRENCE** E. and S.E. Australia. In swamps, streams, and lagoons.

• **REPRODUCTION** Live-bearing, 8–40 neonates.

• **SIMILAR SPECIES** Spotted Blacksnake (*Pseudechis guttatus*).

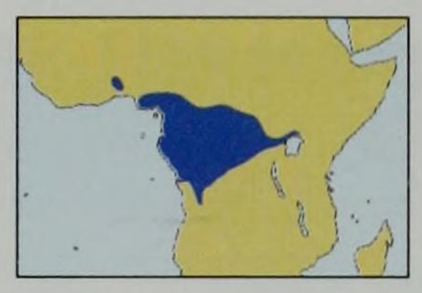
• **REMARK** Numbers of Red-bellied Blacksnakes (and of other frog-eating snakes) have fallen sharply since the arrival in Australia of the Marine Toad (*Bufo marinus*, p.224), a South American species introduced to control pests of sugar cane. This toad is not only fatally poisonous to the Australian snakes, it has also killed many native frogs, depriving the snakes of food.



Length 6½–9ft (2–2.7m)	Diet	Activity

Family ELAPIDAE	Species *Pseudohaje goldii*	Status Rare

GOLD'S TREE COBRA ☠



AFRICA

The slender Gold's Tree Cobra is generally glossy black with a yellow underside and lips. It is noted for its short head and very large eyes. The tail ends in a sharp spine that may be a climbing aid. This rarely seen rainforest snake is naturally agile and arboreal but it can also move rapidly over land. Its prey includes tree-dwelling mammals, such as squirrels, and terrestrial amphibians.

• **OCCURRENCE** W. and C. Africa. In riverine forest.

• **REPRODUCTION** Lays 10–20 eggs.

• **SIMILAR SPECIES** Black Tree Cobra (*Pseudohaje nigra*), Blanding's Treesnake (*Boiga blandingi*).



Length 7–9ft (2.2–2.7m)	Diet	Activity

Family ELAPIDAE	Species *Pseudonaja textilis*	Status Locally common

EASTERN BROWNSNAKE ☠

The Eastern or Common Brownsnake varies greatly in appearance and behavior. Adults may be light or dark brown or even black. Juveniles may be uniformly colored except for a black nape stripe, or completely banded in black, cream, and red. Widely distributed, they are found in a variety of different habitats and may be active by day or by night. Their presence has been recorded in New Guinea, but these snakes may represent a new species. The Eastern Brownsnake is extremely dangerous and responsible for most snakebite fatalities in Australia. When threatened, it reacts aggressively by raising itself into a high S-shaped curve, flattening its neck, opening its mouth, and making rapid, rushing strikes.

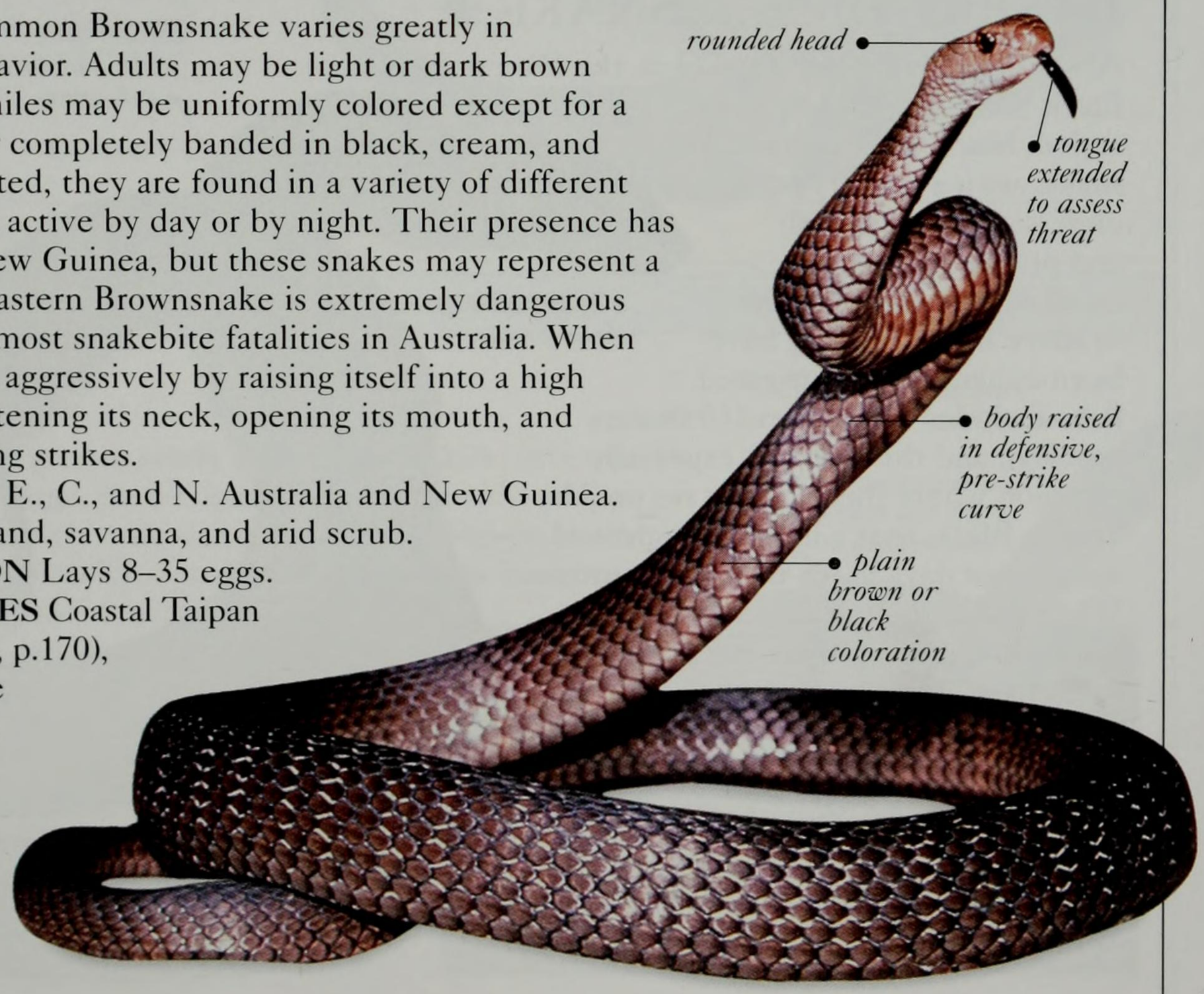
• **OCCURRENCE** E., C., and N. Australia and New Guinea. In dry forest, woodland, savanna, and arid scrub.

• **REPRODUCTION** Lays 8–35 eggs.

• **SIMILAR SPECIES** Coastal Taipan (*Oxyuranus scutellatus*, p.170), Western Brownsnake (*Pseudonaja nuchalis*).



AUSTRALASIA



Length 5–7ft (1.5–2.2m)	Diet	Activity

Family ELAPIDAE	Species *Tropidechis carinatus*	Status Locally common

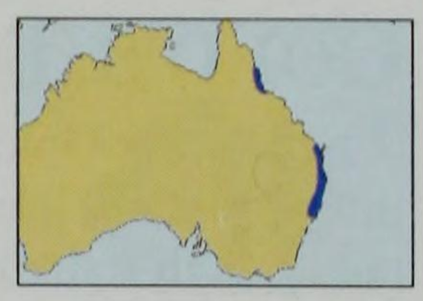
ROUGH-SCALED SNAKE ☠

With its strongly keeled scales, rounded head, and brown, mottled coloration, the highly venomous Rough-scaled Snake closely resembles the well-known, nonvenomous Common Keelback (*Tropidonophis mairii*) from the same area. However, the Common Keelback has a loreal scale on the side of the head, which is absent in the Rough-scaled Snake. Rough-scaled Snakes climb well and shelter in trees by day. They defend themselves by rearing with an S-bend in their necks, hissing and striking rapidly.

• **OCCURRENCE** E. Australia. In freshwater habitats, scrub, and wet woodland.

• **REPRODUCTION** Live-bearing, 5–8 neonates.

• **SIMILAR SPECIES** Common Keelback (*Tropidonophis mairii*).



AUSTRALIA



Length 2–3ft (0.7–1m)	Diet	Activity

Family ELAPIDAE	Species *Walterinnesia aegyptia*	Status Locally common

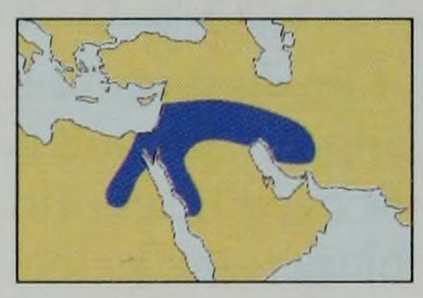
DESERT BLACK SNAKE ☠

Also known as the Desert Cobra, the Desert Black Snake is a glossy, smooth-scaled, black or dark gray snake, with a slightly paler underside. A nocturnal and primarily desert-dwelling species, it seems to move into areas that have been cultivated and irrigated. Prey includes mastigures (*Uromastyx* species), and this snake is especially common where these lizards occur. The Desert Black Snake hunts at night and spends hot days down mammal burrows. When threatened, it raises its body, hisses, and strikes. Bites can be fatal to humans.

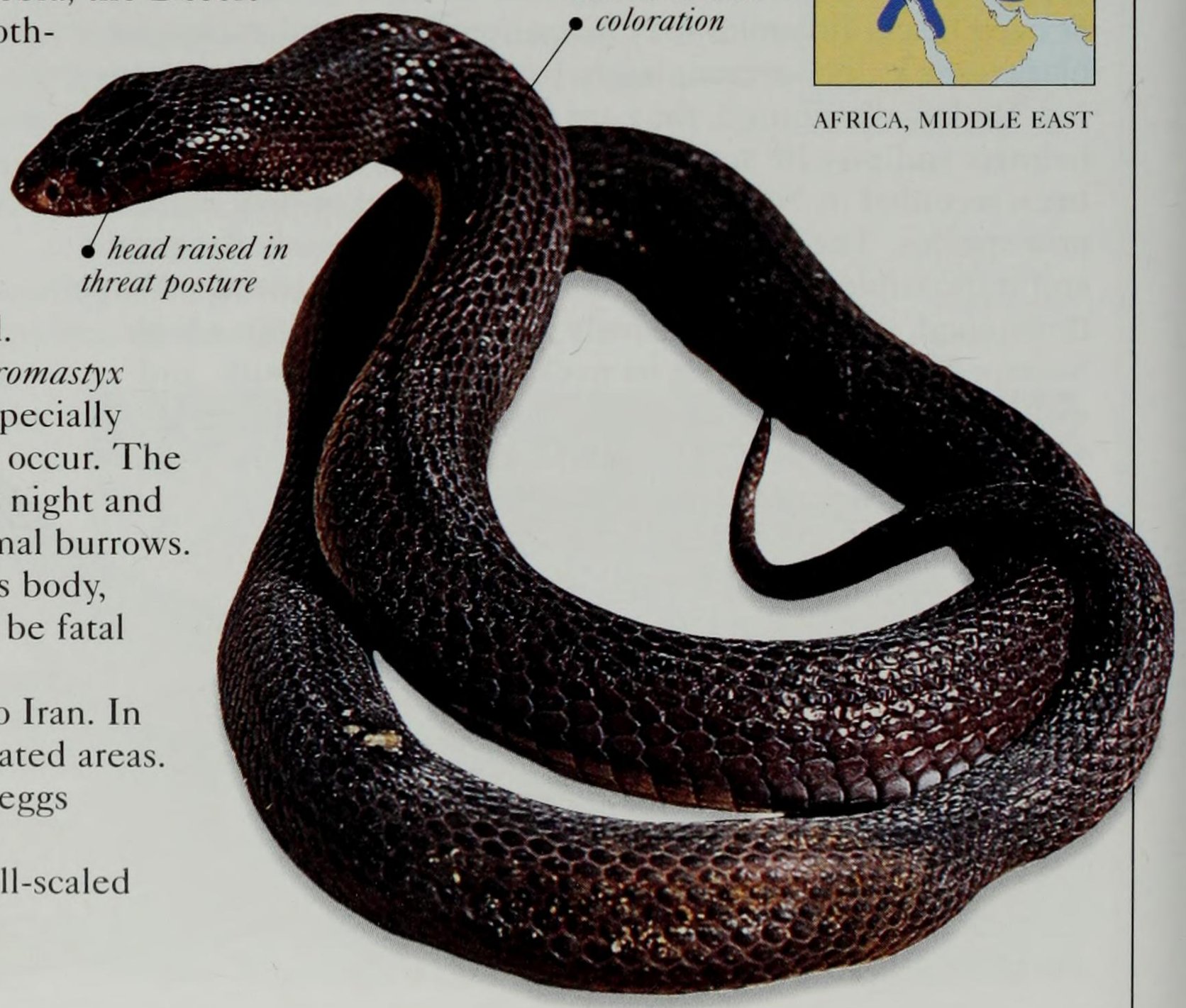
• **OCCURRENCE** Egypt to Iran. In desert, rocky scrub, and irrigated areas.

• **REPRODUCTION** Lays eggs (clutch size unknown).

• **SIMILAR SPECIES** Small-scaled Burrowing Asp (*Atractaspis microlepidota*).



AFRICA, MIDDLE EAST



Length 3–4ft (1–1.3m)	Diet	Activity

Family VIPERIDAE	Species *Agkistrodon bilineatus*	Status Rare

CANTIL ☠

There are four distinct subspecies of Cantil. The Mexican Cantil (*Agkistrodon bilineatus bilineatus*), found from northwest Mexico to El Salvador, is dark brown, with lighter brown, hour-glass saddles edged with white and dark brown; the Castellana (*A. bilineatus howardgloydi*), which occurs from western Honduras to Costa Rica, is similar but with less white; the Ornate Cantil (*A. bilineatus taylori*), of northeastern Mexico, is light gray, with yellow and dark gray bands; the Yucatean Cantil (*A. bilineatus russeolus*), from Yucatan and Belize, is brown. All have five white stripes that run from the snout tip, over the eyes, along the lips, and down the chin.

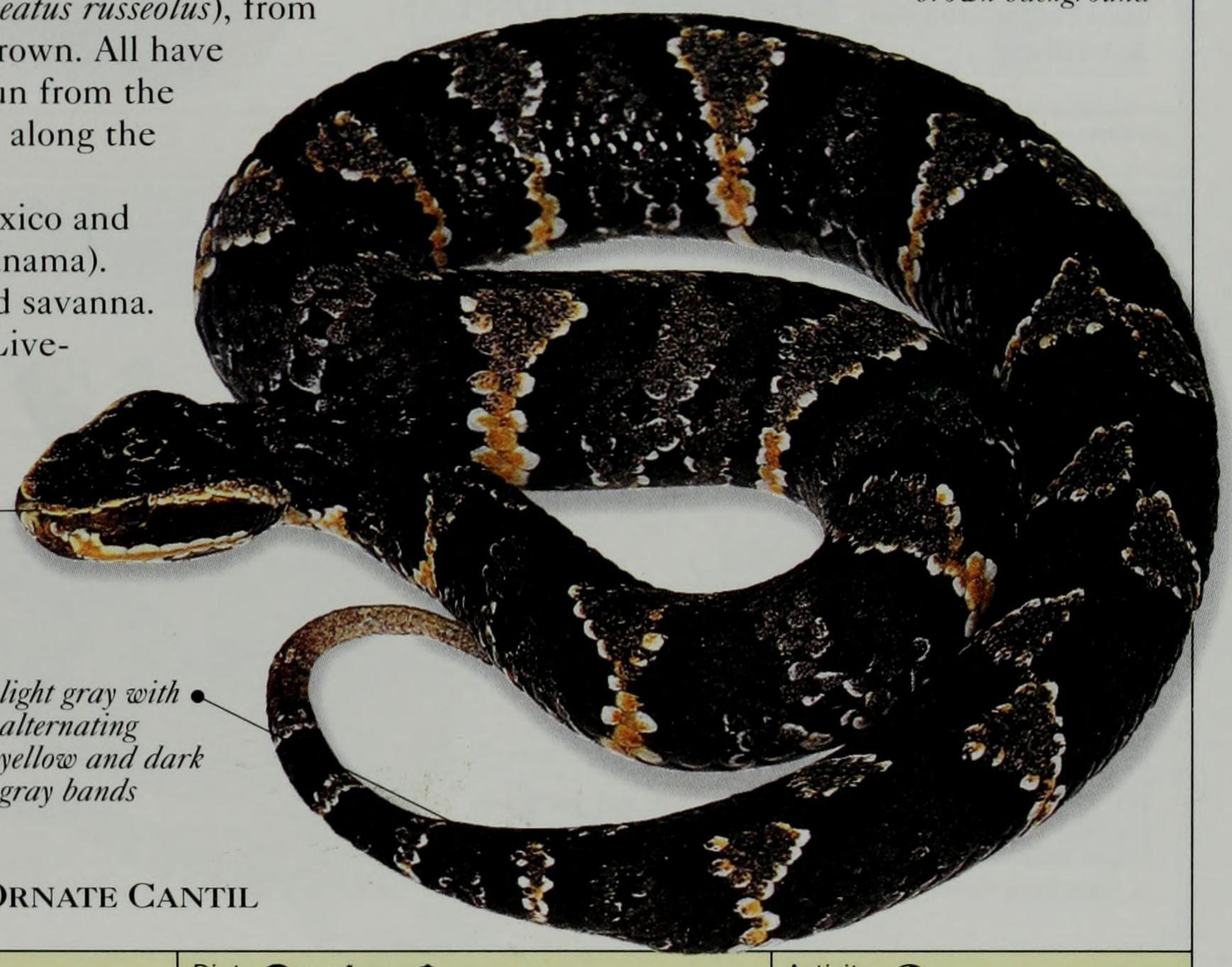
• **OCCURRENCE** Mexico and Central America (not Panama). In dry tropical forest and savanna.

• **REPRODUCTION** Live-bearing, 7–20 neonates.



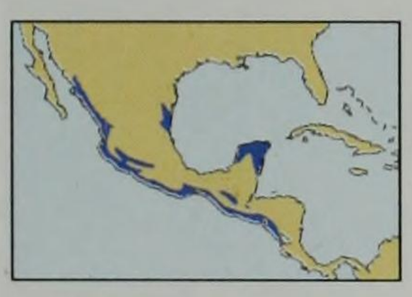
MEXICAN CANTIL (JUVENILE)

light brown saddles on dark brown background



five white lines radiate backward from snout tip

light gray with alternating yellow and dark gray bands



N. & C. AMERICA

ORNATE CANTIL

Length 2½–4ft (0.8–1.3m)	Diet	Activity

Family VIPERIDAE	Species *Agkistrodon blomhoffi*	Status Common

MAMUSHI ☠

This pitviper is pale gray to sandy colored, with dark, inverted-U-shaped markings or large, dark-edged spots on the sides. A pair of tiny indentations on each scale distinguish Mamushis from other Asian *Agkistrodon* species. This snake is collected for food, for making saki, and for traditional medicines.

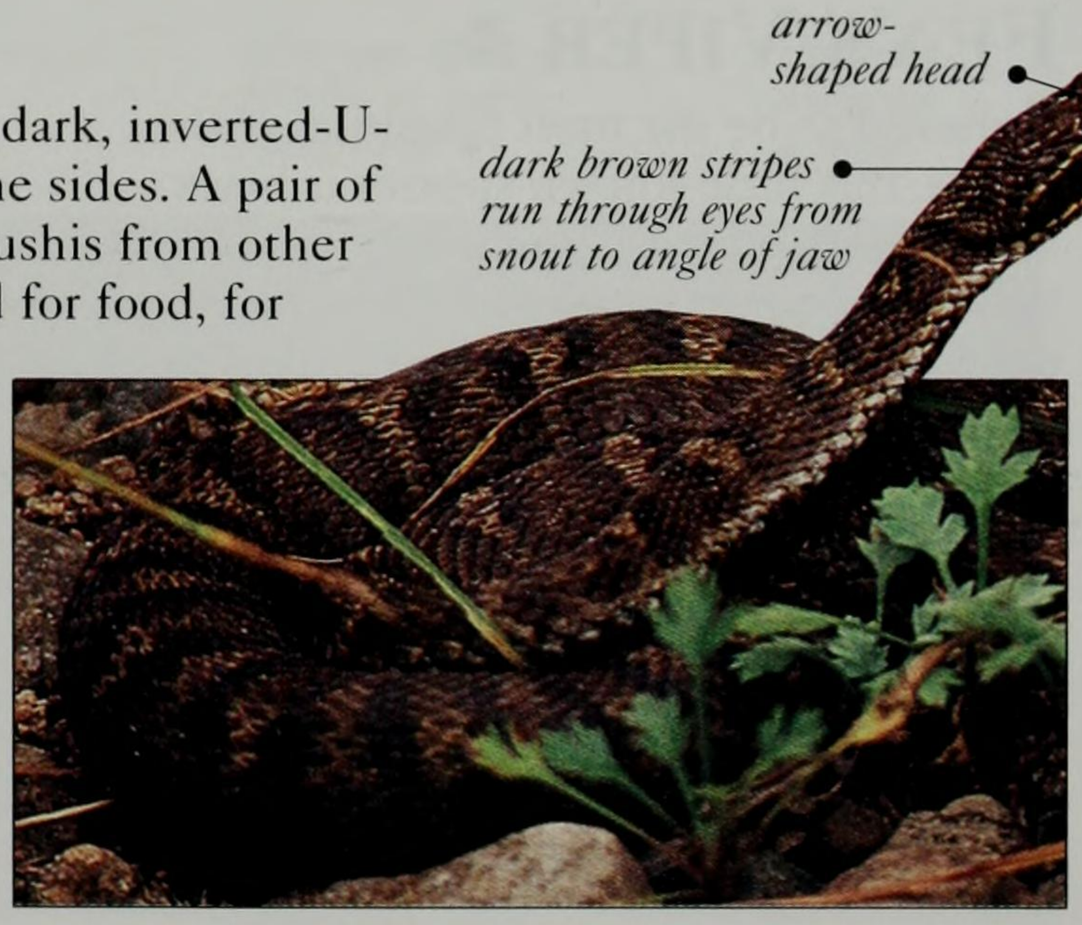
• **OCCURRENCE** Japan and also on mainland E. Asia. In grassland and cultivated areas and on rocky hillsides.



ASIA

• **REPRODUCTION** Live-bearing, 2–13 neonates.

• **SIMILAR SPECIES** Asian Pitviper (*Agkistrodon intermedius*), Siberian Pitviper (*A. halys*).



arrow-shaped head

dark brown stripes run through eyes from snout to angle of jaw

Length 16–24in (40–60cm)	Diet	Activity

Family VIPERIDAE	Species *Agkistrodon contortrix*	Status Locally common

COPPERHEAD ☠

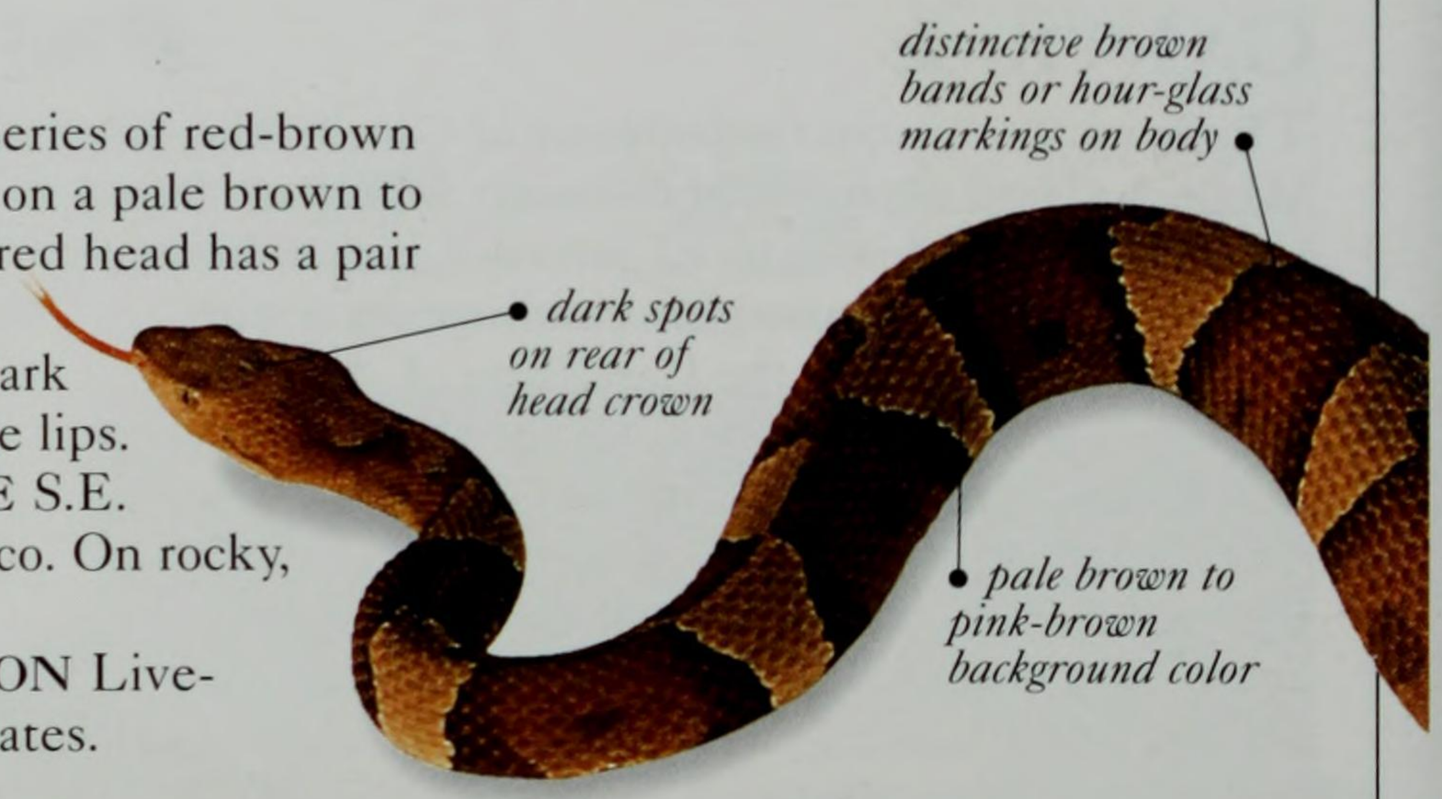
The Copperhead is patterned with a series of red-brown bands, or hour-glass-shaped markings, on a pale brown to pink-brown background. The tan-colored head has a pair of small, darker spots at the rear. A fine, dark brown stripe separates the dark crown from the pale lips.



N. AMERICA

• **OCCURRENCE** S.E. US and N.E. Mexico. On rocky, wooded hillsides.

• **REPRODUCTION** Live-bearing, 4–16 neonates.



Length 2–4ft (0.7–1.3m)	Diet	Activity

Family VIPERIDAE	Species *Agkistrodon piscivorus*	Status Common

COTTONMOUTH ☠

Also known as the Water Moccasin, the Cottonmouth is named for the pure white interior of its mouth. Adults are very dark and uniform in color, while juveniles (shown here) are lighter with distinctive patterning.

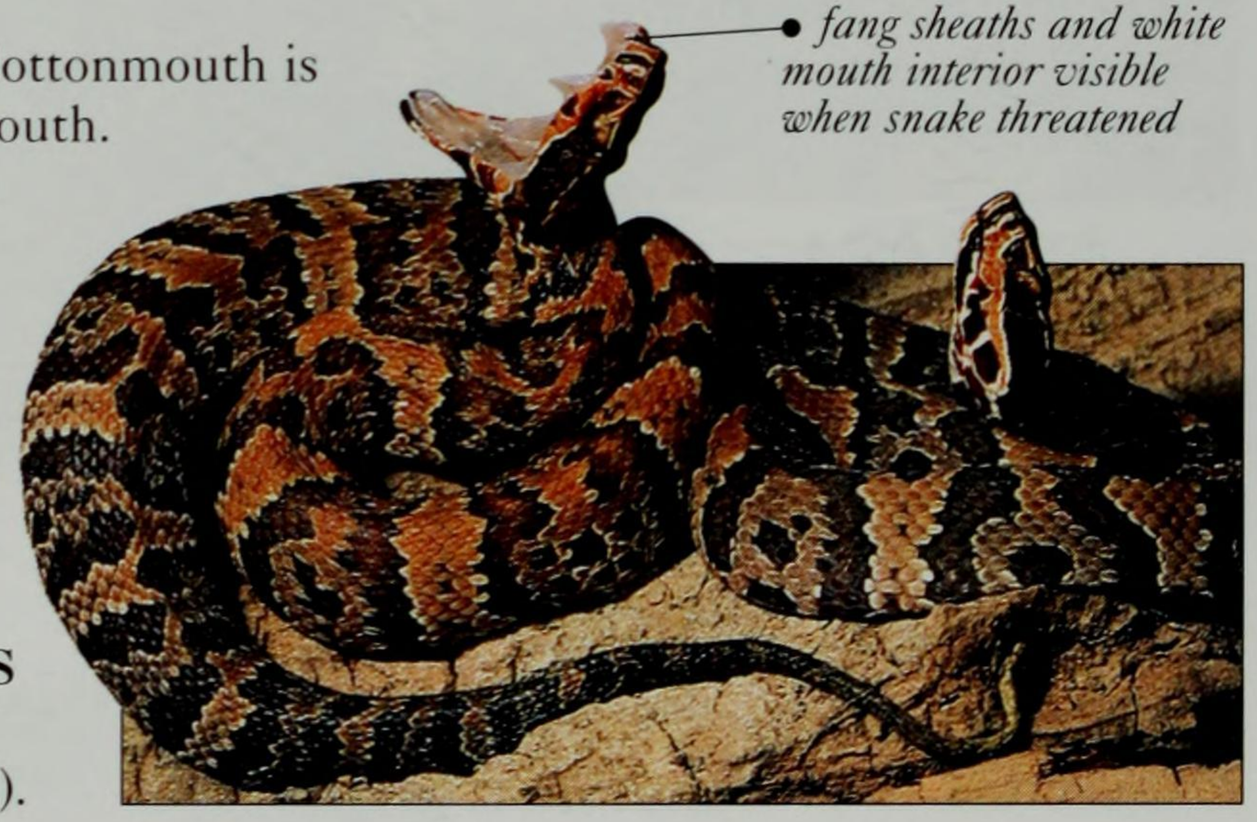
• **OCCURRENCE** S.E. US. In swamps, bayous, and slow rivers.



N. AMERICA

• **REPRODUCTION** Live-bearing, 1–16 neonates.

• **SIMILAR SPECIES** American watersnakes (*Nerodia* species, p.148).

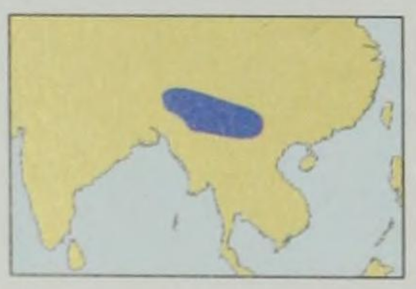


Length 5–6ft (1.5–1.8m)	Diet	Activity

Family VIPERIDAE	Species *Azemiops feae*	Status Rare

FEA'S VIPER ☠

Believed to be the most primitive of the vipers, this little-known species is black-brown, with a series of narrow pink or yellow bands that sometimes meet over the center of the back. Its most distinctive features are its yellow head and neck, marked with a pair of slightly darker longitudinal dorsal stripes. The eyes are small, with vertical pupils.



ASIA

• **OCCURRENCE** S. Himalayan foothills. In montane rainforest.

• **REPRODUCTION** Unknown, but probably lays eggs.

Length 20–35in (50–90cm)	Diet	Activity Unknown

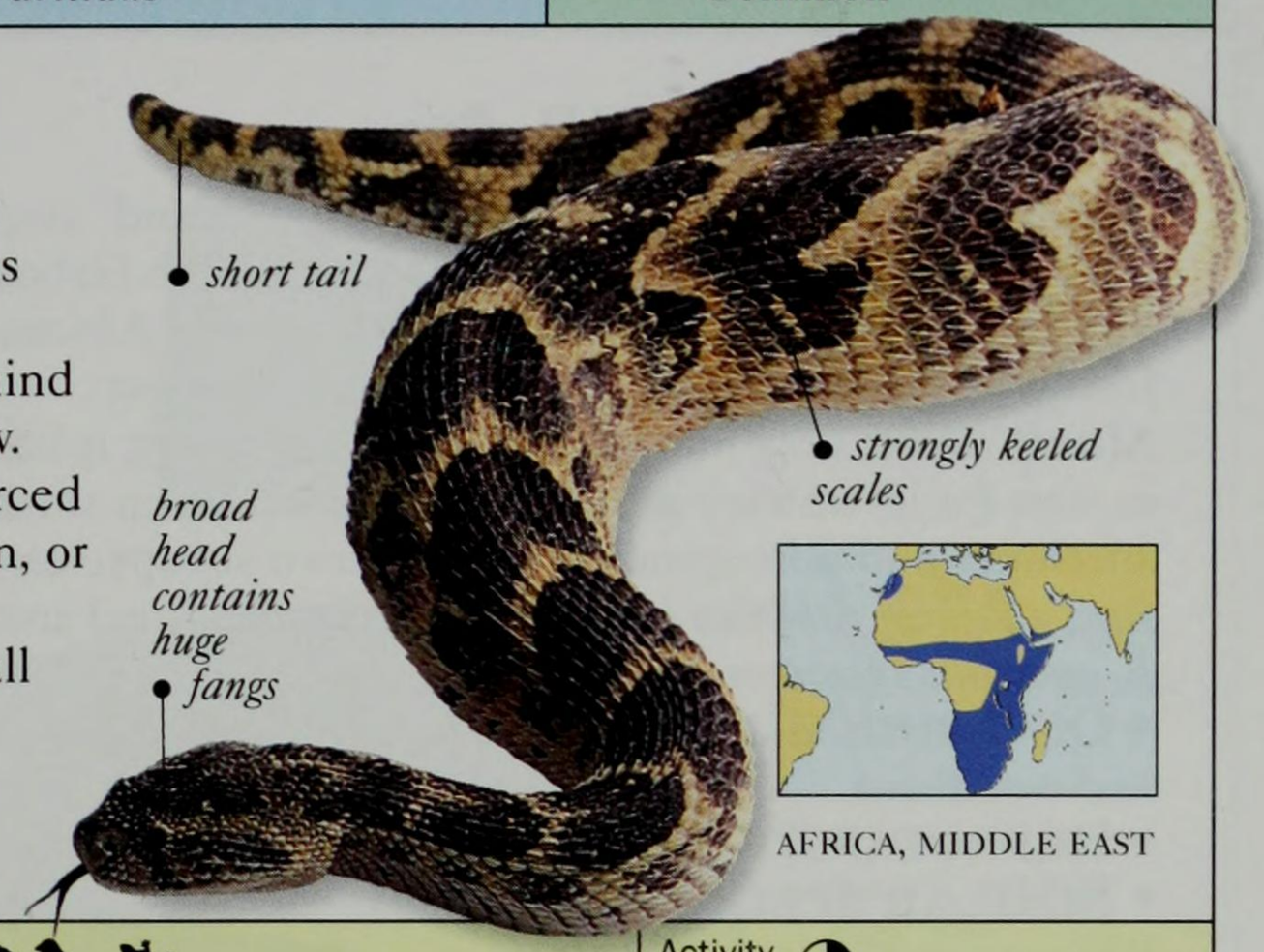
Family VIPERIDAE	Species *Bitis arietans*	Status Common

PUFF ADDER ☠

The Puff Adder has a stout gray, yellow, or brown body, with light-edged dark chevrons that pass over the center of the back. The large, broad brown head has a pale line behind the eyes that extends to the back of the jaw. Large Puff Adders are so heavy they are forced to move in a straight-line, rectilinear motion, or a caterpillar crawl, like large boas.

• **OCCURRENCE** Africa and Yemen. In all habitats except desert and mountains.

• **REPRODUCTION** Live-bearing, 40–150 neonates.



AFRICA, MIDDLE EAST

Length 3–6ft (0.9–1.8m)	Diet	Activity ◑

Family VIPERIDAE	Species *Bitis caudalis*	Status Locally common

HORNED ADDER ☠

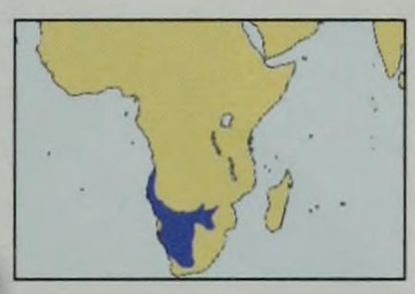
This short, stocky, variable viper is gray to sandy, orange, or red-brown above, with three rows of dark blotches. It is totally white below.

• **OCCURRENCE** S.W. Africa. In desert and scrub.

• **REPRODUCTION** Live-bearing, 4–27 neonates.

• **SIMILAR SPECIES** Common Rhombic Egg-eater (*Dasypeltis scabra*, p.130).





AFRICA

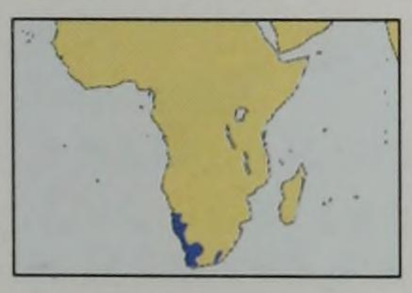
Length 12–20in (30–50cm)	Diet	Activity ☾

Family VIPERIDAE	Species *Bitis cornuta*	Status Locally common

MANY-HORNED ADDER ☠

This gray to brown viper has a twin row of square to rectangular, dark-centered, light-edged markings on its back. Smaller dark blotches are present on the sides, and the underside is dark-speckled. Most individuals have two to seven horns over each eye; some are hornless.

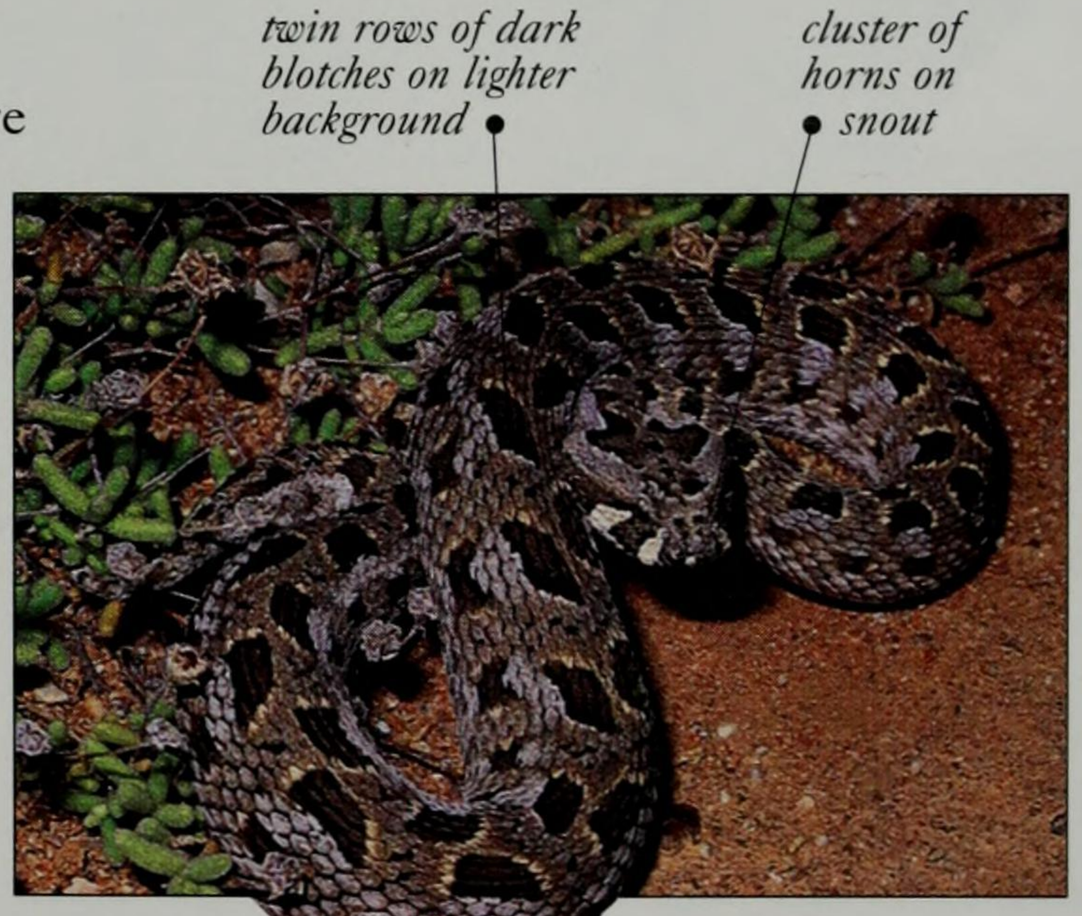
• **OCCURRENCE** E. South Africa and Namibia. On mountains and rocky plains.



AFRICA

• **REPRODUCTION** Live-bearing, 6–8 neonates.

• **SIMILAR SPECIES** Plain Mountain Adder (*Bitis inornata*).



Length 10–13in (25–34cm)	Diet	Activity ◑

Family VIPERIDAE	Species *Bitis gabonica*	Status Locally common

GABOON VIPER ☠

The geometric patterning of browns, grays, and purples, and the large, leaflike head, make the Gaboon Viper one of the most cryptically patterned of African forest-floor snakes. It is the longest and heaviest African viper; slow moving and often sedentary, it lies in wait for its unwary prey – rats, squirrels, even small antelopes and porcupines. There are two subspecies: *Bitis gabonica gabonica* (eastern and central Africa) and *B. gabonica rhinoceros* (west Africa).

• **OCCURRENCE** Tropical Africa. In rainforest and woodland.

• **REPRODUCTION** Live-bearing, 16–60 neonates.

• **SIMILAR SPECIES** Rhinoceros Viper (*B. nasicornis*, opposite).

hornlike projections on snout tip, longer than in East African Gaboon Viper



WEST AFRICAN GABOON VIPER (JUVENILE)

stripe behind each eye, as in East African Gaboon Viper

GABOON VIPER (JUVENILE)

heavy body with short tail

cryptic patterning makes viper difficult to detect when lying in dead leaves

vertical stripes beneath eyes

massive, leaflike head contains fangs up to 2in (5cm) long in adult

smaller nasal projections than in West African Gaboon Viper



EAST AFRICAN GABOON VIPER (JUVENILE)



AFRICA

Length 4–6½ft (1.2–2m)	Diet	Activity ☾

Family VIPERIDAE	Species *Bitis nasicornis*	Status Locally common

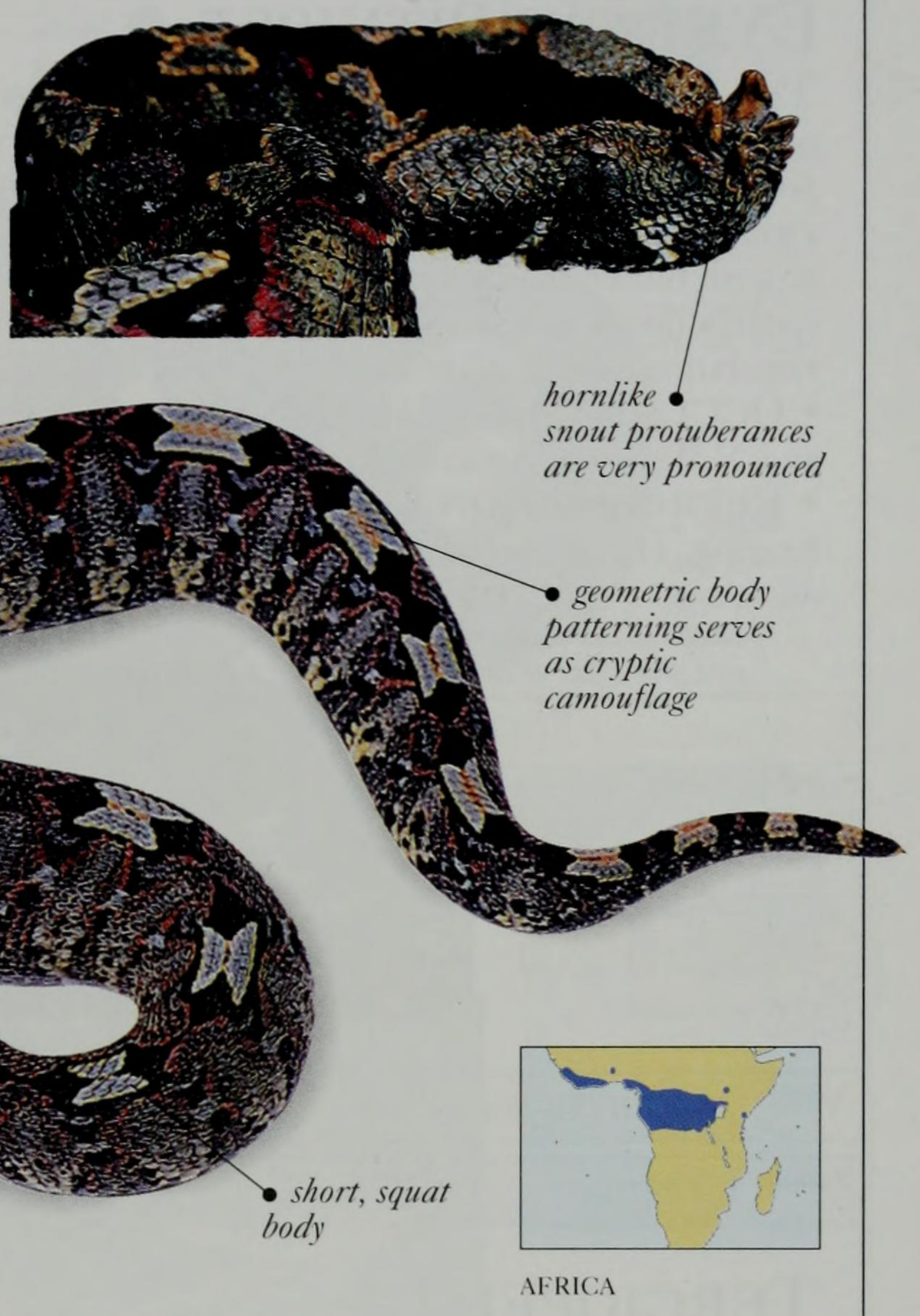
RHINOCEROS VIPER ☠

Also known as the River Jack, this large viper is an ambusher of mammals and big frogs. The patterning is as cryptic as that of its relative, the Gaboon Viper (*Bitis gabonica*, opposite), comprising a geometric carpet of gray, blue, purple, orange, and velvet-black, with a large black, arrow-shaped marking on top of the long head. The hornlike protuberances on the snout are longer even than those of the West African Gaboon Viper (*B. gabonica rhinoceros*). Although it is terrestrial, the Rhinoceros Viper can climb into low bushes and swims well. The juvenile is shown here.

• **OCCURRENCE** W. and C. Africa. In rainforest and riverine forest.

• **REPRODUCTION** Live-bearing, 6–40 neonates.

• **SIMILAR SPECIES** Gaboon Viper (*B. gabonica*, opposite).



AFRICA

Length 3–4ft (0.9–1.2m)	Diet	Activity

Family VIPERIDAE	Species *Bitis peringueyi*	Status Endangered

PERINGUEY'S ADDER ☠

Also known as the Namib Desert Sidewinding Viper, this adder moves rapidly over the loose dune sands, using a diagonal, sidewinding motion that leaves J-shaped markings in the sand. Avoiding the heat of the day, it shuffles into the shadow of vegetation, with only its flatfishlike, dorsally positioned eyes visible above the surface. It ambushes any diurnal lizard that ventures close, and actively hunts geckos at night.

• **OCCURRENCE** S.W. Africa. In desert sand dunes.

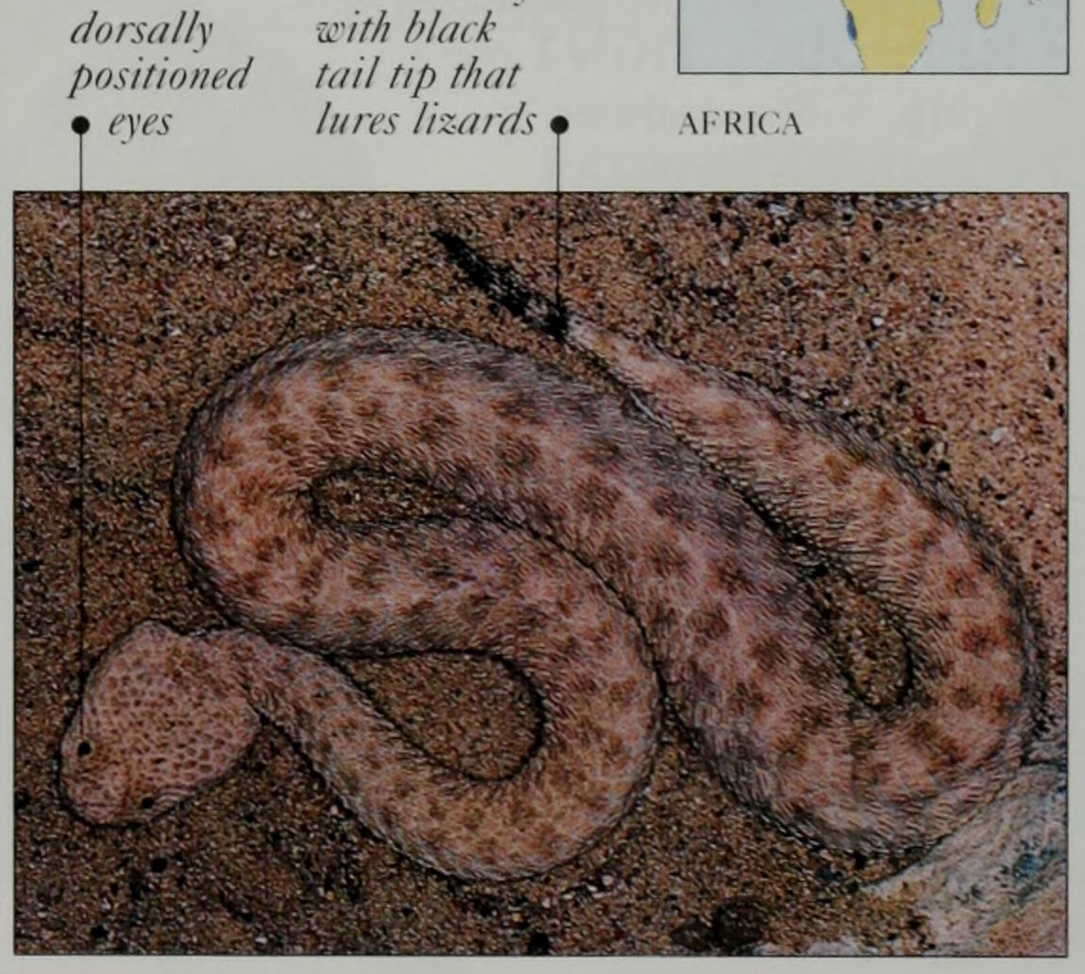
• **REPRODUCTION** Live-bearing, 4–10 neonates.

• **SIMILAR SPECIES** Namaqua Dwarf Adder (*Bitis schneideri*).

• **REMARK** Peringuey's Adder is the only snake with dorsally positioned eyes.



AFRICA



Length 10–12in (25–30cm)	Diet	Activity

Family VIPERIDAE	Species *Bothriechis schlegelii*	Status Locally common

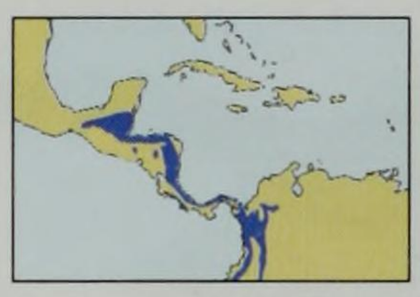
EYELASH PITVIPER ☠

This is one of the most easily recognized of the American pitvipers, owing to the raised scales around the eyes, which give the impression of eyelashes. It is highly variable, with a gray or green to golden coloration, sometimes speckled or with blotches. This is an arboreal species but it lies in ambush in low vegetation shortly after dark.

• **OCCURRENCE** Central America and N.W. South America. In rainforest.

• **REPRODUCTION** Live-bearing, 11–24 neonates.





C. & S. AMERICA

Length 20–31in (50–80cm)	Diet	Activity ☾

Family VIPERIDAE	Species *Bothrops asper*	Status Common

TERCIOPELO ☠

A dangerous snake, this has a large, lance-shaped head and a long, relatively slender body. It may be gray or tan to almost black, with light-edged, dark dorsal triangles, which may meet across the back to form an "X." Some juveniles are semiarboreal.

• **OCCURRENCE** Central and N. South America. In a wide variety of habitats from rainforest to farmland.

• **REPRODUCTION** Live-bearing, 5–86 neonates.

• **SIMILAR SPECIES** Central American Bushmaster (*Lachesis stenophrys*), Common Lancehead (*Bothrops atrox*, opposite).

• **REMARK** Terciopelos are responsible for 90 percent of serious bites within Central and N. South America.



C. & S. AMERICA



Length 4–8ft (1.2–2.5m)	Diet	Activity ☾

Family VIPERIDAE	Species *Bothrops atrox*	Status Common

COMMON LANCEHEAD ☠

This lancehead is gray to brown, with dark, inverted-V-shaped markings on the upper sides; these markings may be more distinct in juveniles (shown here). A dark stripe runs from each eye to the jaw. It is semiarboreal when juvenile and terrestrial when adult.

• **OCCURRENCE** N. South America. In various habitats from rainforest to farmland.

• **REPRODUCTION** Live-bearing, 10–30 neonates.

• **SIMILAR SPECIES** Brazil's Lancehead (*Bothrops brazili*), Ilha Marajo Lancehead (*B. marajoensis*).



S. AMERICA

Length 2½–5ft (0.8–1.5m)	Diet	Activity ☾

Family VIPERIDAE	Species *Bothrops insularis*	Status Common

GOLDEN LANCEHEAD ☠

This slender orange species is both arboreal and terrestrial, and is up to five times more venomous than other snakes in South America. On its isolated island it feeds on birds, since there are no mammals.

• **OCCURRENCE** Queimada Grande island, Brazil. In dry island forest.

• **REPRODUCTION** Live-bearing, 6–12 neonates.





QUEIMADA GRANDE

Length 2–3ft (0.7–1m)	Diet	Activity ◯

Family VIPERIDAE	Species *Bothrops jararaca*	Status Common

JARARACA ☠

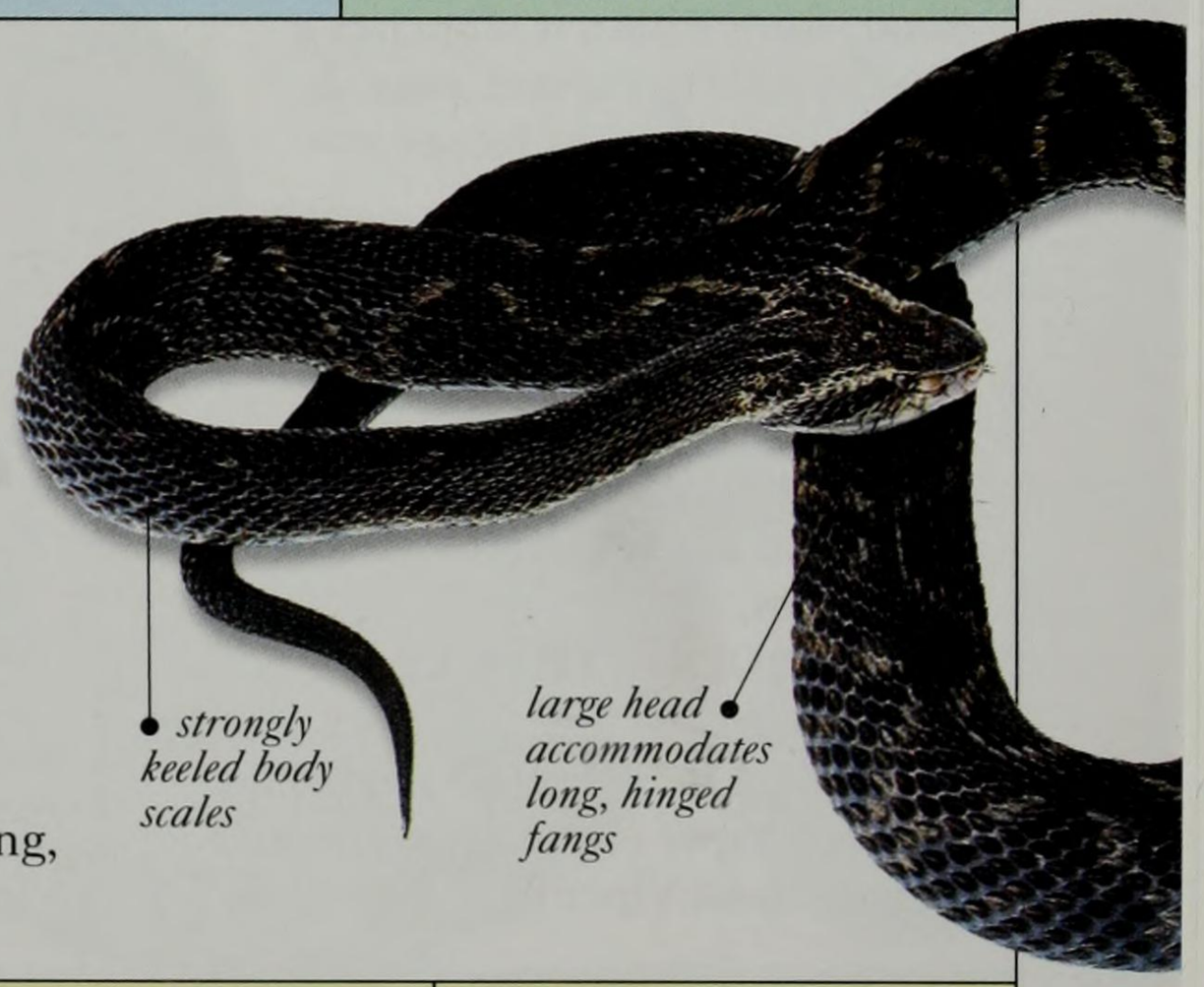
The Jararaca is brown in color, with variable and cryptic patterning. In some individuals, the dark, inverted-V shapes on a lighter background are well marked; in others they are barely visible. Although it is a terrestrial species, juveniles may be found in trees. Its preference for open areas brings it into frequent contact with humans, sometimes resulting in serious bites.



S. AMERICA

• **OCCURRENCE** S. Brazil and S.E. Paraguay. In dry forest, savanna, and cultivated areas.

• **REPRODUCTION** Live-bearing, 12–18 neonates.



Length 3–5ft (1–1.6m)	Diet	Activity ◯

Family VIPERIDAE	Species *Calloselasma rhodostoma*	Status Common

MALAYAN PITVIPER ☠

The Malayan Pitviper is brown with small, dark, inverted-V-shaped markings along its back. The lance-shaped head is brown above, bordered by a pair of yellow-brown stripes. A broad, dark brown stripe runs from each eye to the back of the jaw. The lips, chin, and throat are white. Unlike most vipers, this species lays eggs.

• **OCCURRENCE** Mainland S.E. Asia and Java. In dry woodland and on plantations.

• **REPRODUCTION** Lays 20–40 eggs.

• **SIMILAR SPECIES** Chinese Copperhead (*Deinagkistrodon acutus*).



ASIA



Length 2–3ft (0.7–1m)	Diet	Activity ☾

Family VIPERIDAE	Species *Cerastes cerastes*	Status Common

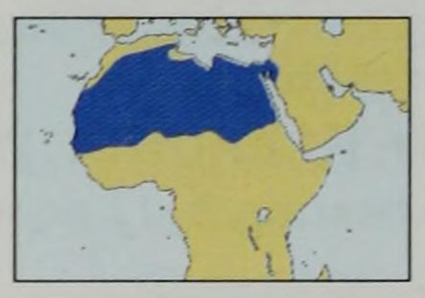
SAHARA HORNED VIPER ☠

This desert viper has a subdued brown-and-gray coloration, with faded darker blotches running down its back. A single large scale is usually present, raised into a horn over each eye, although hornless specimens are common. A slow-moving snake, it spends the day in burrows, under vegetation, or buried in loose sand, from where it launches a rapid strike to capture prey. It moves rapidly over loose sands, using a diagonal sidewinding motion. To ward off predators, it rasps the very rough scales together to make a sawing sound.

• **OCCURRENCE** Saharan Africa. In sandy deserts and oases.

• **REPRODUCTION** Lays 10–23 eggs.

• **SIMILAR SPECIES** Arabian Horned Viper (*Cerastes gasperettii*), Sahara Sand Viper (*C. vipera*).



AFRICA



Length 24–33in (60–85cm)	Diet	Activity ☾

Family VIPERIDAE	Species *Crotalus adamanteus*	Status Locally common

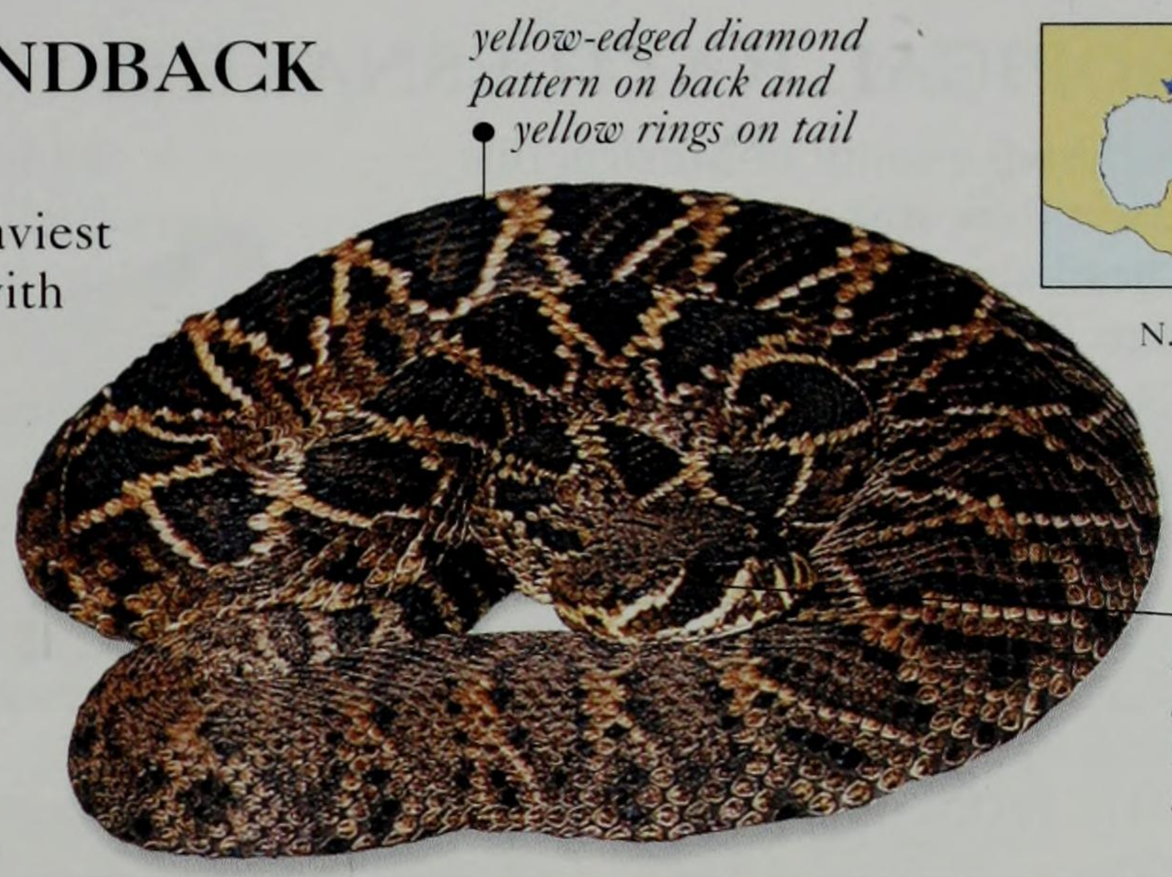
EASTERN DIAMONDBACK RATTLESNAKE ☠

North America's longest and heaviest venomous snake, this is brown with diamond markings on the back and yellow rings on the tail.

• **OCCURRENCE** S.E. US. In dry lowland woodland.

• **REPRODUCTION** Live-bearing, 6–21 neonates.

• **SIMILAR SPECIES** Western Diamondback Rattlesnake (*Crotalus atrox*, below).





N. AMERICA

Length 3–8ft (1–2.4m)	Diet	Activity

Family VIPERIDAE	Species *Crotalus atrox*	Status Common

WESTERN DIAMONDBACK RATTLESNAKE ☠

This species may be yellow to gray or red, with diamond patterns, and a black-and-white ringed tail.

• **OCCURRENCE** S. US and N. Mexico. In desert, scrubland, and dry woodland.

• **REPRODUCTION** Live-bearing, 4–25 neonates.

• **SIMILAR SPECIES** Red Diamond Rattlesnake (*Crotalus exsul ruber*).





N. AMERICA

Length 3–7ft (1–2.1m)	Diet	Activity

Family VIPERIDAE	Species *Crotalus cerastes*	Status Locally common

SIDEWINDER ☠

The slender Sidewinder is easily distinguished from all other rattlesnakes by the raised, hornlike projections over each eye. It is pastel colored, in various desert hues of yellow, pink, tan, or gray, with longitudinal rows of faded spots. The tail has darker rings. This snake is adapted to the desert, "sidewinding" across loose sand in a diagonal direction, lifting its body as it moves and leaving J-shaped tracks.

• **OCCURRENCE** S.W. US and N.W. Mexico. In sandy desert.

• **REPRODUCTION** Live-bearing, 5–18 neonates.



N. AMERICA

Length 24–31in (60–80cm)	Diet	Activity

Family VIPERIDAE	Species *Crotalus durissus*	Status Common

NEOTROPICAL RATTLESNAKE ☠

The only rattlesnake south of Mexico, this species has twin dark stripes that run from the back of the head along the neck, and a raised vertebral ridge. There are 13 to 14 subspecies, including the endangered dwarf Aruba Island Rattlesnake (*Crotalus durissus unicolor*) and the Uracoan Rattlesnake (*C. durissus vegrandis*) from Venezuela. They may not rattle a warning.

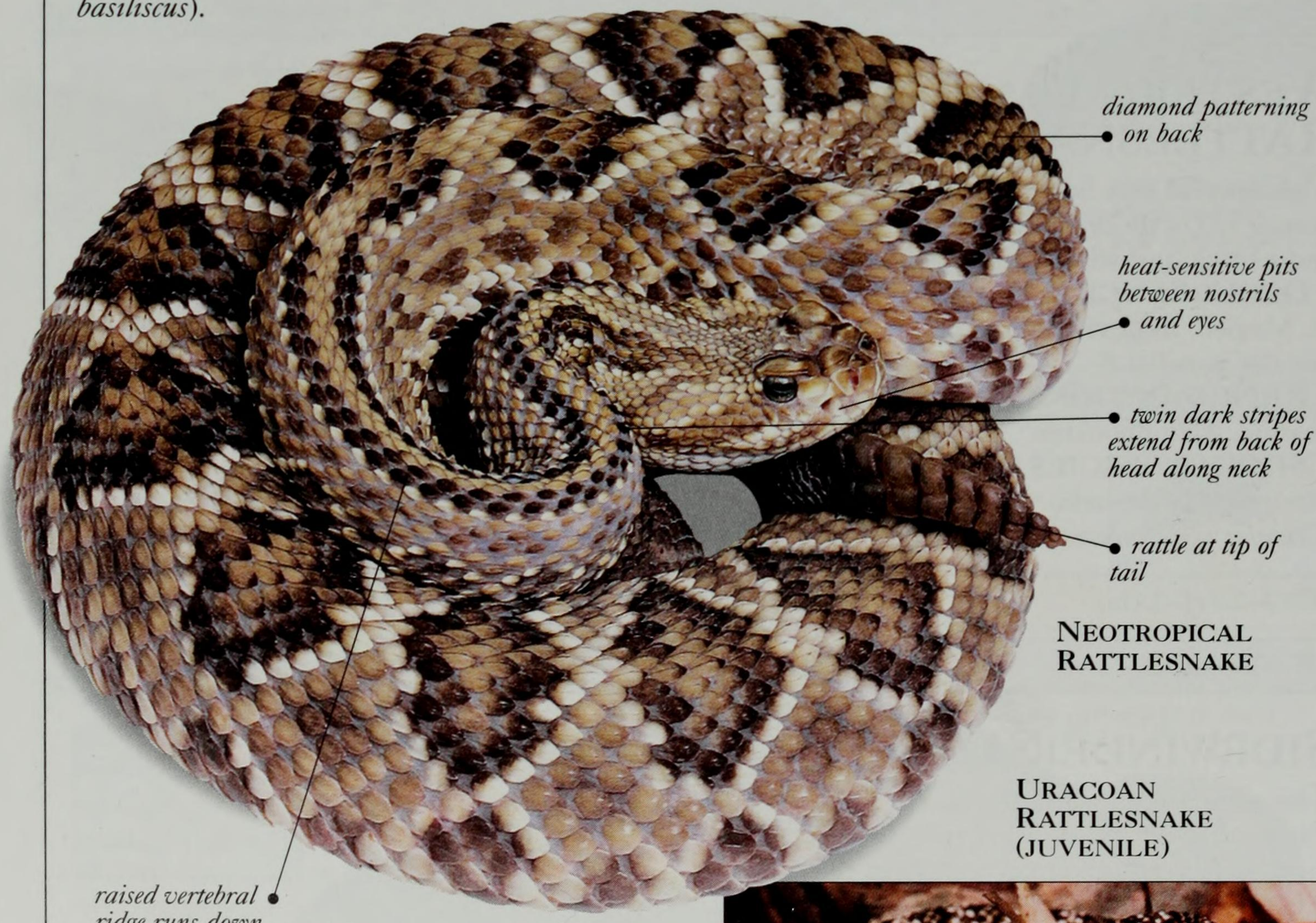
• **OCCURRENCE** N.E. Mexico to N. Argentina (excluding Ecuador and Chile). In savanna and savanna woodland.

• **REPRODUCTION** Live-bearing, 2–47 neonates.

• **SIMILAR SPECIES** Mexican West Coast Rattlesnake (*Crotalus basiliscus*).



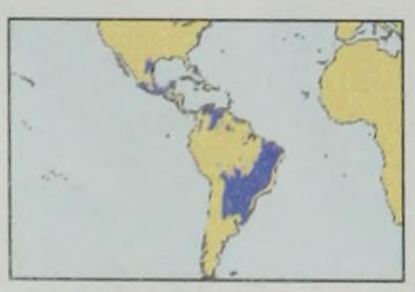
ARUBA ISLAND RATTLESNAKE



NEOTROPICAL RATTLESNAKE

URACOAN RATTLESNAKE (JUVENILE)





N., C., & S. AMERICA

Length 3–6ft (1–1.8m)	Diet	Activity

Family VIPERIDAE	Species *Crotalus horridus*	Status Endangered

TIMBER RATTLESNAKE ☠

The first rattlesnake encountered by European colonists, the Timber Rattlesnake is also one of the most persecuted snakes in the United States. It is highly variable in coloration, ranging from black to dark brown, light brown, yellow, or light gray, with an overlying pattern of variable dark bands and an almost entirely black tail. Light-colored specimens may have orange vertebral stripes. The scientific name, *Crotalus horridus*, refers to the prickly, keeled scales.

• **OCCURRENCE** E. US. In montane woodland and lowland swamps.

• **REPRODUCTION** Live-bearing, 3–19 neonates.

• **SIMILAR SPECIES** Blacktail Rattlesnake (*Crotalus molossus*).

• **REMARK** The sole Canadian population went extinct in 1941.



N. AMERICA



Length 3–6ft (0.9–1.8m)	Diet	Activity

Family VIPERIDAE	Species *Crotalus viridis*	Status Common

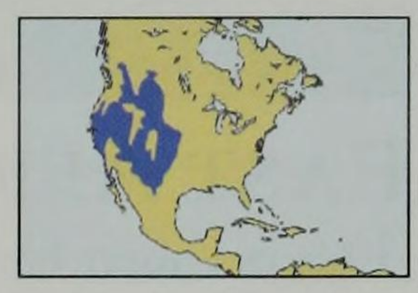
WESTERN RATTLESNAKE ☠

The Western Rattlesnake has the widest range of any rattlesnake in western North America. The basic pattern is one of dark-edged blotches on a lighter background, but there is much variation between the nine subspecies. The Arizona Black Rattlesnake (*Crotalus viridis cerberus*) is very dark; the Prairie Rattlesnake (*C. viridis viridis*, shown here) is greenish or reddish brown; the small Hopi Rattlesnake (*C. viridis nuntius*) is reddish brown; and the Midget Faded Rattlesnake (*C. viridis concolor*) may be almost cream-colored.

• **OCCURRENCE** E. North America, from southern Canada to Baja California, Mexico. In many habitats, from sea level and desert edges to 10,850ft (3,300m).

• **REPRODUCTION** Live-bearing, 3–25 neonates.

• **SIMILAR SPECIES** Mojave Rattlesnake (*C. scutellatus*), Western Diamondback Rattlesnake (*C. atrox*, p.183).



N. AMERICA



Length 2–5ft (0.6–1.6m)	Diet	Activity

Family VIPERIDAE	Species *Daboia russelii*	Status Locally common

RUSSELL'S VIPER ☠

This viper is unmistakable in both its appearance and behavior. The background color is orange, pink, or gray, broken by three longitudinal rows of large, dark-edged spots, often interspersed by two rows of smaller but similar markings. Curved markings of the same color are present on the head. If alarmed, Russell's Viper will issue a prolonged, very loud hiss.

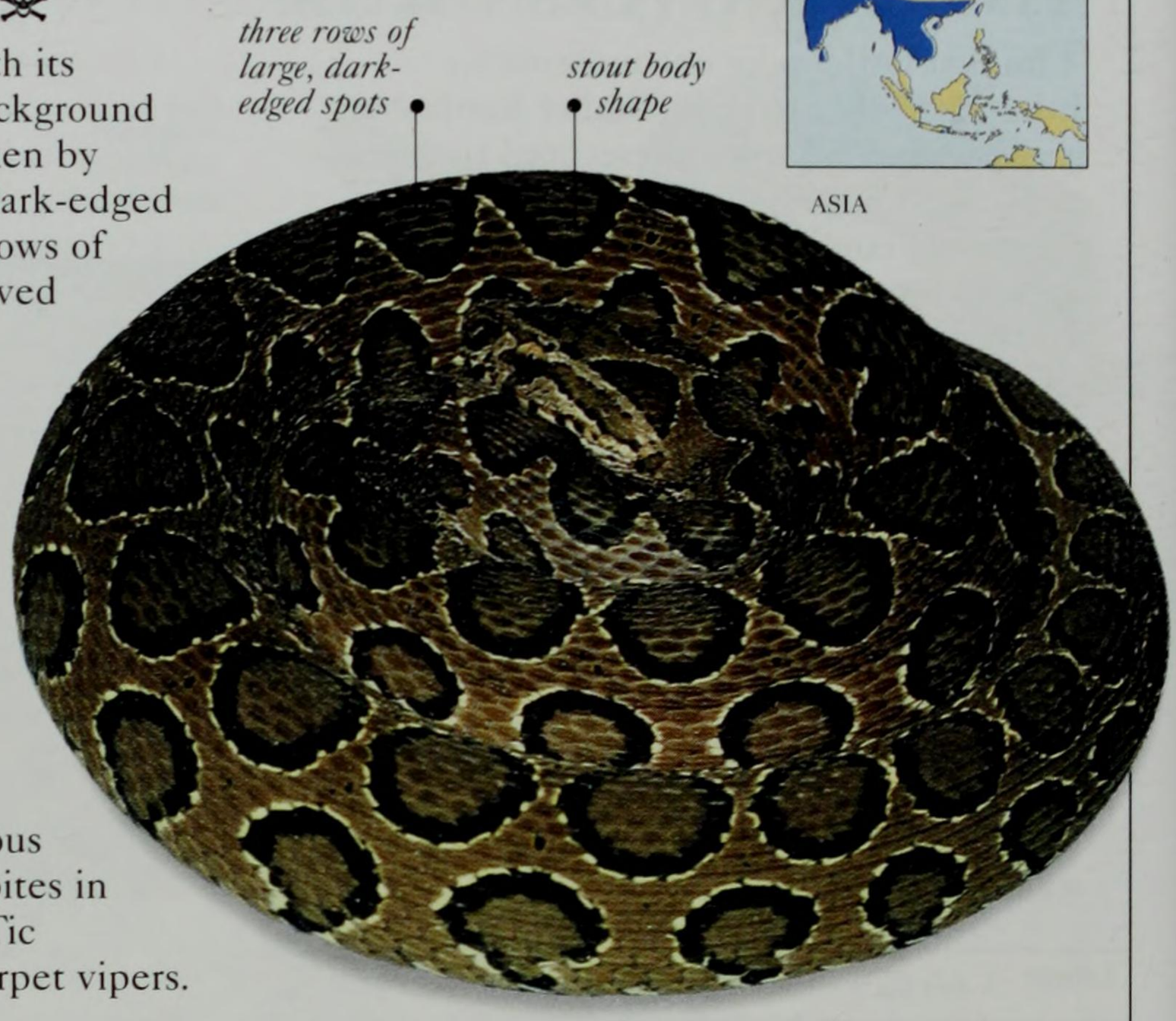
• OCCURRENCE Pakistan to Thailand and Taiwan, and Indonesia (Java and the Lesser Sunda Islands). In dry woodland and grassy hills.

• REPRODUCTION Live-bearing, 30–60 neonates.

• REMARK This highly venomous snake causes more serious snakebites in Sri Lanka (where it is known as Tic Polonga) than cobras, kraits, or carpet vipers.



ASIA



Length 3–5ft (1–1.5m)	Diet	Activity ☾

Family VIPERIDAE	Species *Echis pyramidum*	Status Locally common

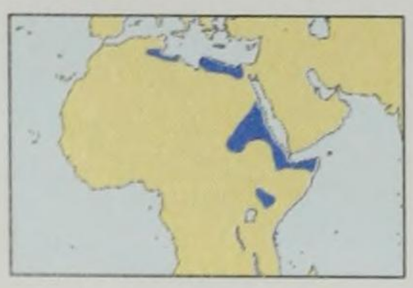
EAST AFRICAN CARPET VIPER ☠

This is a short brown viper with a rounded head. The keels of the scales along the sides, which are arranged obliquely, are serrated. When alarmed, the carpet viper forms its body into a series of concentric curves and rasps the serrated scales together to produce a loud "saw-scaling" sound; it may strike simultaneously with a rapid jabbing motion.

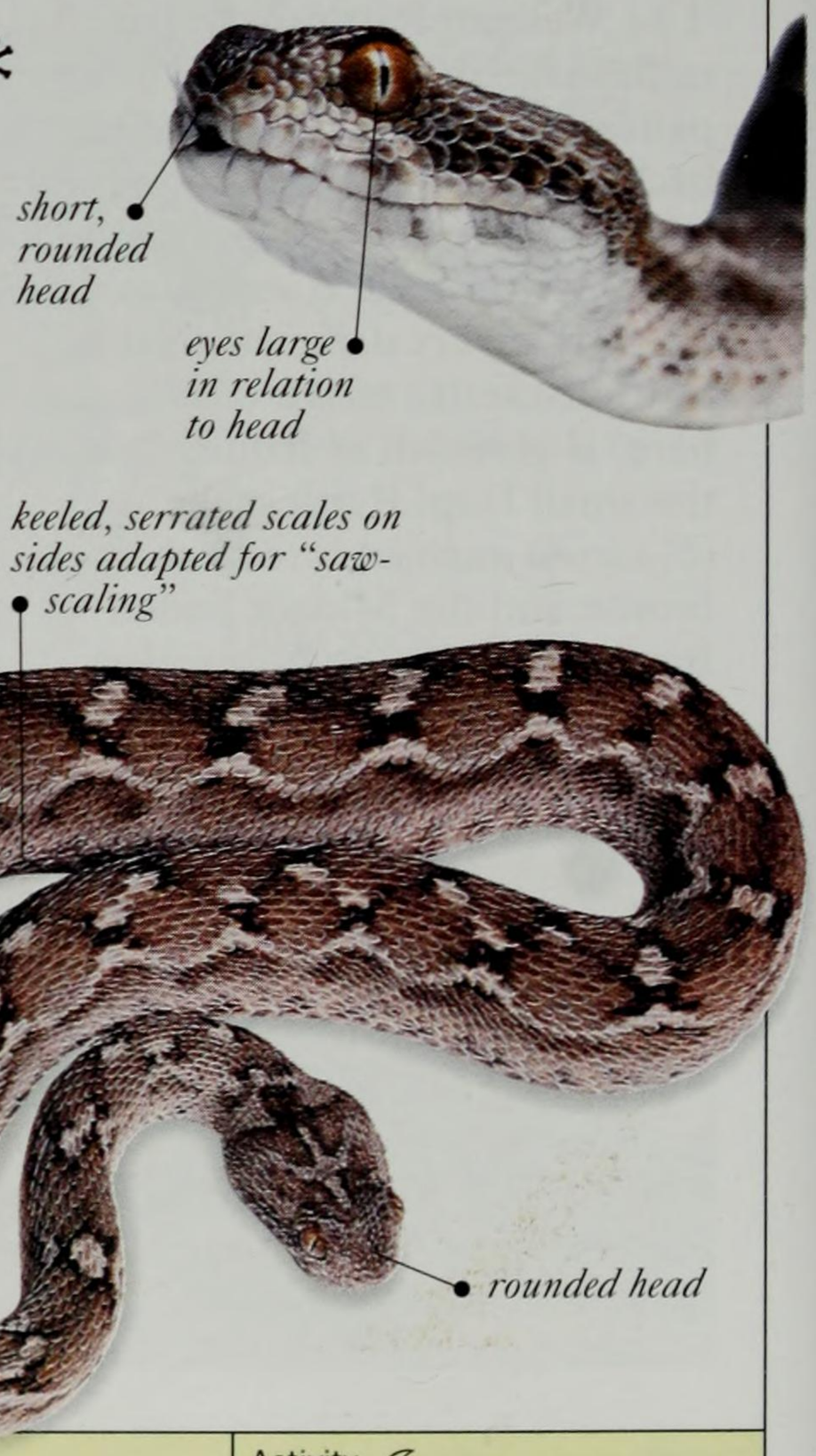
• OCCURRENCE N. and N.E. Africa. In oases and on rocky and grassy terrain.

• REPRODUCTION Lays 4–20 eggs.

• SIMILAR SPECIES Burton's Painted Carpet Viper (*Echis coloratus*).



AFRICA



Length 20–33in (50–85cm)	Diet	Activity ☾

Family VIPERIDAE	Species *Lachesis muta*	Status Locally common

SOUTH AMERICAN BUSHMASTER ☠

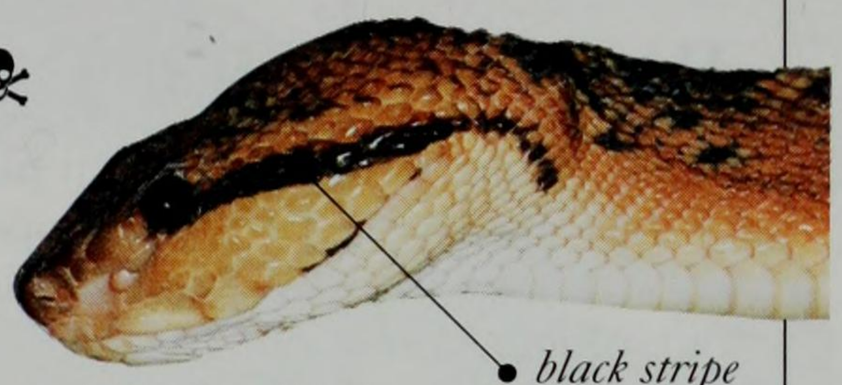
This viper is brown, yellow, or pink, with contrasting dark brown or black rhomboid markings that pass over the back. A black stripe runs from the eyes to the jaw. The tail terminates in a short spine. There are two subspecies: the Amazonian Bushmaster (*Lachesis muta muta*) and the Atlantic Coastal Bushmaster (*L. muta rhombeata*), which is highly endangered.

• **OCCURRENCE** Amazon Basin and E. Brazil, along the Atlantic coast. In rainforest.

• **REPRODUCTION** Lays 5–18 eggs.

• **SIMILAR SPECIES** Black-headed Bushmaster (*Lachesis melanocephala*), Central American Bushmaster (*L. stenophrys*).

• **REMARK** Bushmasters (*Lachesis* species) are the largest and only egg-laying vipers in the Americas.



AMAZONIAN BUSHMASTER

ATLANTIC COASTAL BUSHMASTER





S. AMERICA

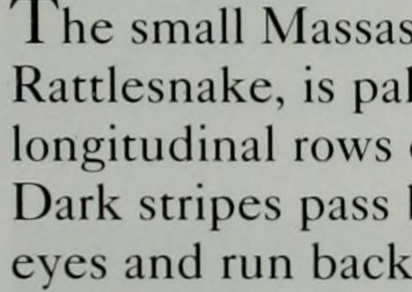
Length 6½–11½ft (2–3.5m)	Diet	Activity

Family VIPERIDAE	Species *Sistrurus catenatus*	Status Endangered

MASSASAUGA ☠

The small Massasauga, also known as the Swamp Rattlesnake, is pale gray or brown, with several longitudinal rows of dark spots. Dark stripes pass between the eyes and run backward to the nape and the jaw. The dorsal head scales are unusual for rattlesnakes, because they are large scutes rather than granular scales. Massasaugas swim well and some populations hibernate in crayfish burrows.

• **OCCURRENCE** S.E. Canada to N.E. Mexico. In swamps, meadows, and river beds.



N. AMERICA

• **REPRODUCTION** Live-bearing, 2–19 neonates.

• **SIMILAR SPECIES** Pygmy Rattlesnake (*Sistrurus miliarius*), Western Hognose Snake (*Heterodon nasicus*, p.138).



Length 2½–3ft (0.8–1m)	Diet	Activity

Family VIPERIDAE	Species *Trimeresurus albolabris*	Status Common

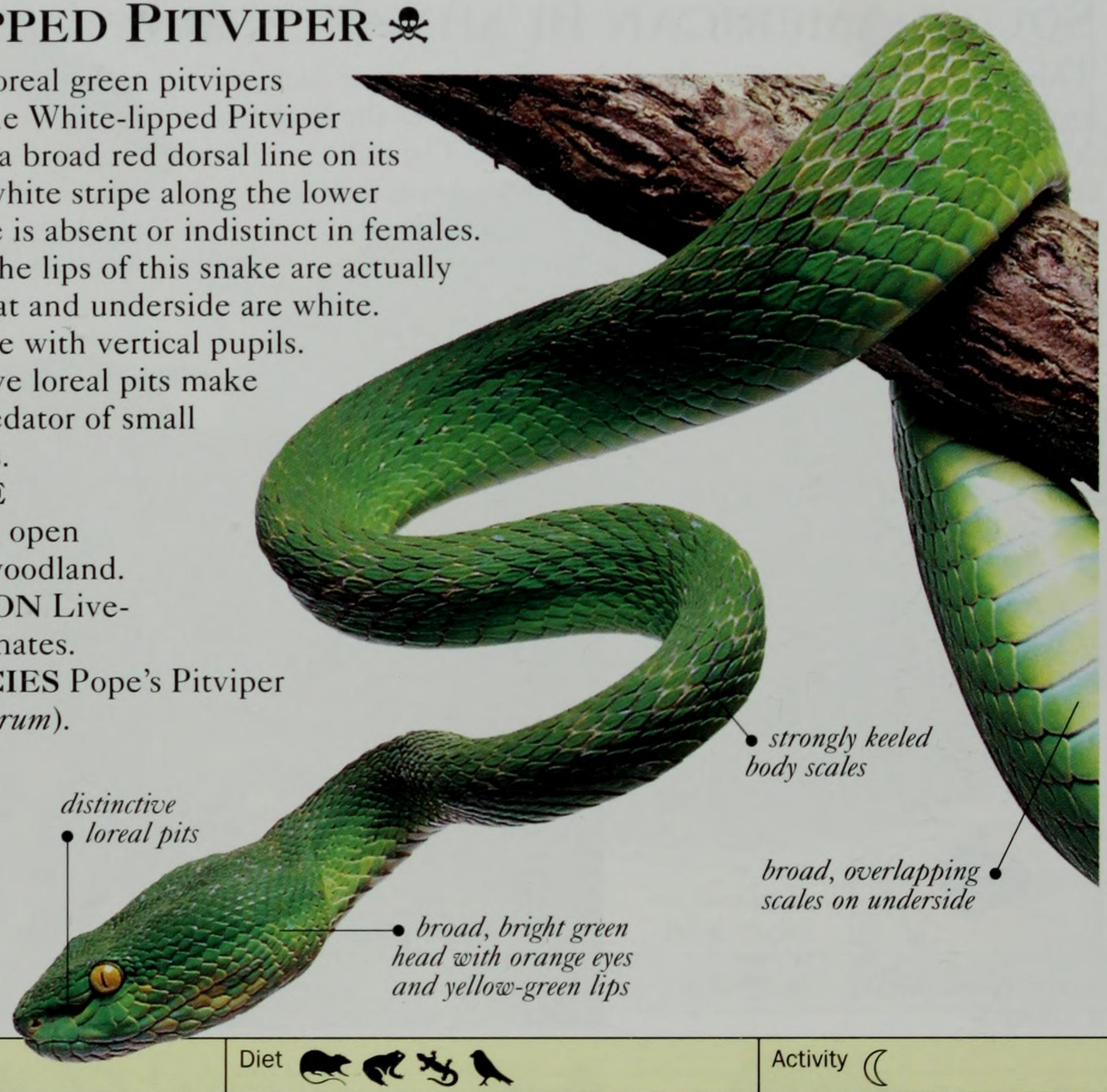
WHITE-LIPPED PITVIPER ☠

One of several arboreal green pitvipers in southern Asia, the White-lipped Pitviper is vivid green with a broad red dorsal line on its tail. Males have a white stripe along the lower sides but this stripe is absent or indistinct in females. Despite its name, the lips of this snake are actually green, but the throat and underside are white. The eyes are orange with vertical pupils. Large, heat-sensitive loreal pits make this an efficient predator of small mammals and birds.

• **OCCURRENCE** S. and S.E. Asia. In open lowland and hilly woodland.

• **REPRODUCTION** Live-bearing, 15–25 neonates.

• **SIMILAR SPECIES** Pope's Pitviper (*Trimeresurus popeiorum*).





ASIA

Length 2–3ft (0.6–1m)	Diet	Activity ☾

Family VIPERIDAE	Species *Tropidolaemus wagleri*	Status Locally common

WAGLER'S TEMPLE PITVIPER ☠

This is a highly variable species. Adult females have huge heads and may be green, turquoise, or black, with bars of yellow, light green, and black spots. Juveniles and some older males are bright green. A brown stripe often runs through the eyes for camouflage.

• **OCCURRENCE** Thailand, Indonesia, Malaysia, and Philippines. In lowland woodland and wooded swamps.

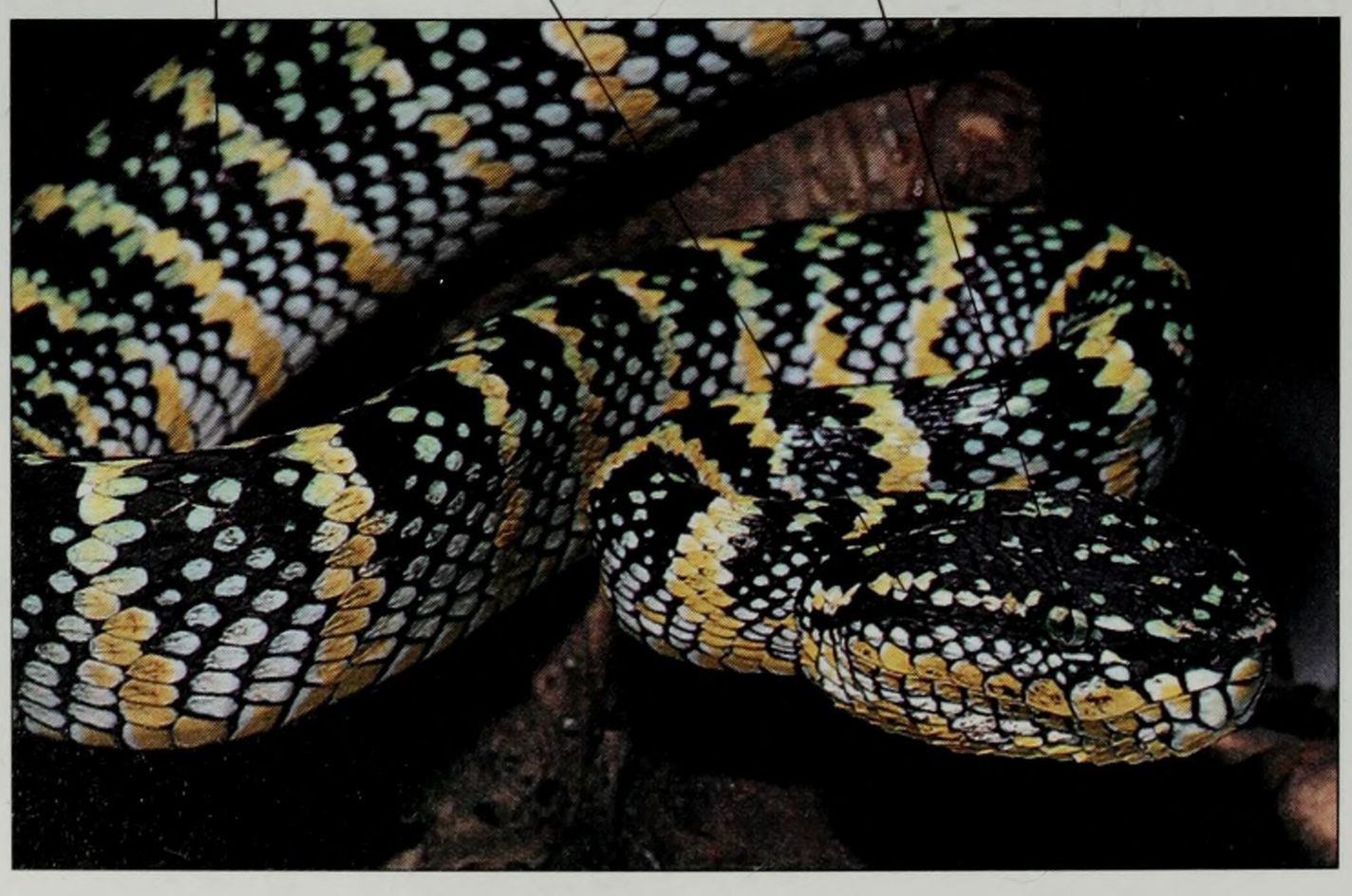
• **REPRODUCTION** Live-bearing, 15–40 neonates.

• **SIMILAR SPECIES** Mangrove Pitviper (*Trimeresurus purpureomaculatus*).

• **REMARK** This is the famous Temple Viper of the Snake Temple in Penang, Malaysia.



ASIA



Length 2½–4ft (0.8–1.3m)	Diet	Activity ☾

Family VIPERIDAE	Species *Vipera ammodytes*	Status Common

NOSE-HORNED VIPER ☠

Europe's most venomous snake, this species has a projection on its nose and a zigzag pattern down its back. Males are usually light gray, while females may be darker gray to brown.

• **OCCURRENCE** N.E. Italy to Turkey, Lebanon, and Caspian Sea.



EUROPE, ASIA

In open woodland and on dry, rocky slopes.

• **REPRODUCTION** Live-bearing, 5–15 neonates.



Length 25½–35in (65–90cm)	Diet	Activity

Family VIPERIDAE	Species *Vipera berus*	Status Locally common

NORTHERN CROSS ADDER ☠

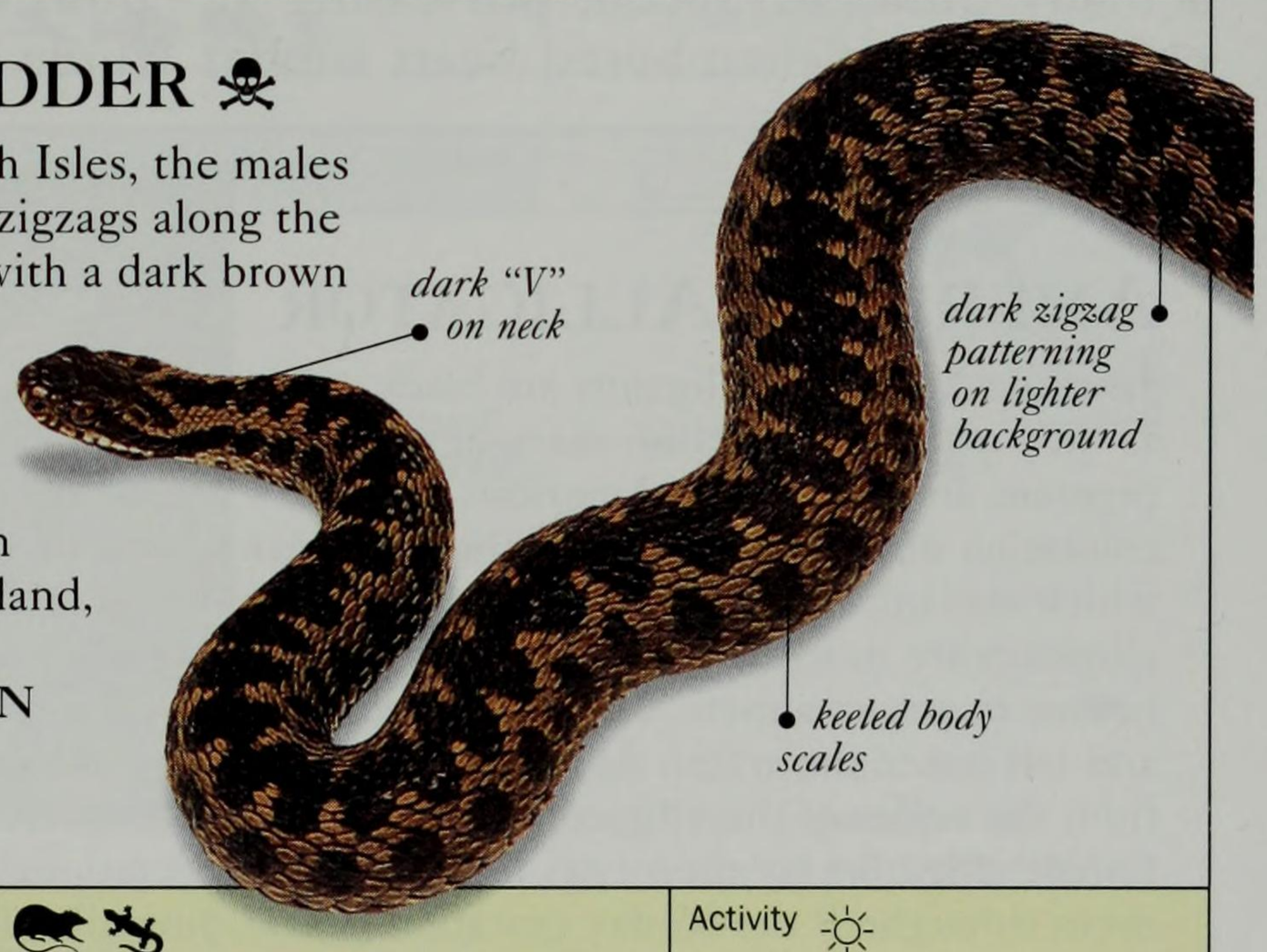
The only venomous snake in the British Isles, the males of this species are light gray with black zigzags along the back, while females are usually brown with a dark brown zigzag. Some females are totally black.

• **OCCURRENCE** Great Britain and Scandinavia to Sakhalin Island, north of Japan. On heathland and railroad embankments and in marshes, open woodland, and meadows.



EUROPE, ASIA

• **REPRODUCTION** Live-bearing, 4–20 neonates.



Length 25½–35in (65–90cm)	Diet	Activity

Family VIPERIDAE	Species *Vipera latastei*	Status Locally common

LATASTE'S VIPER ☠

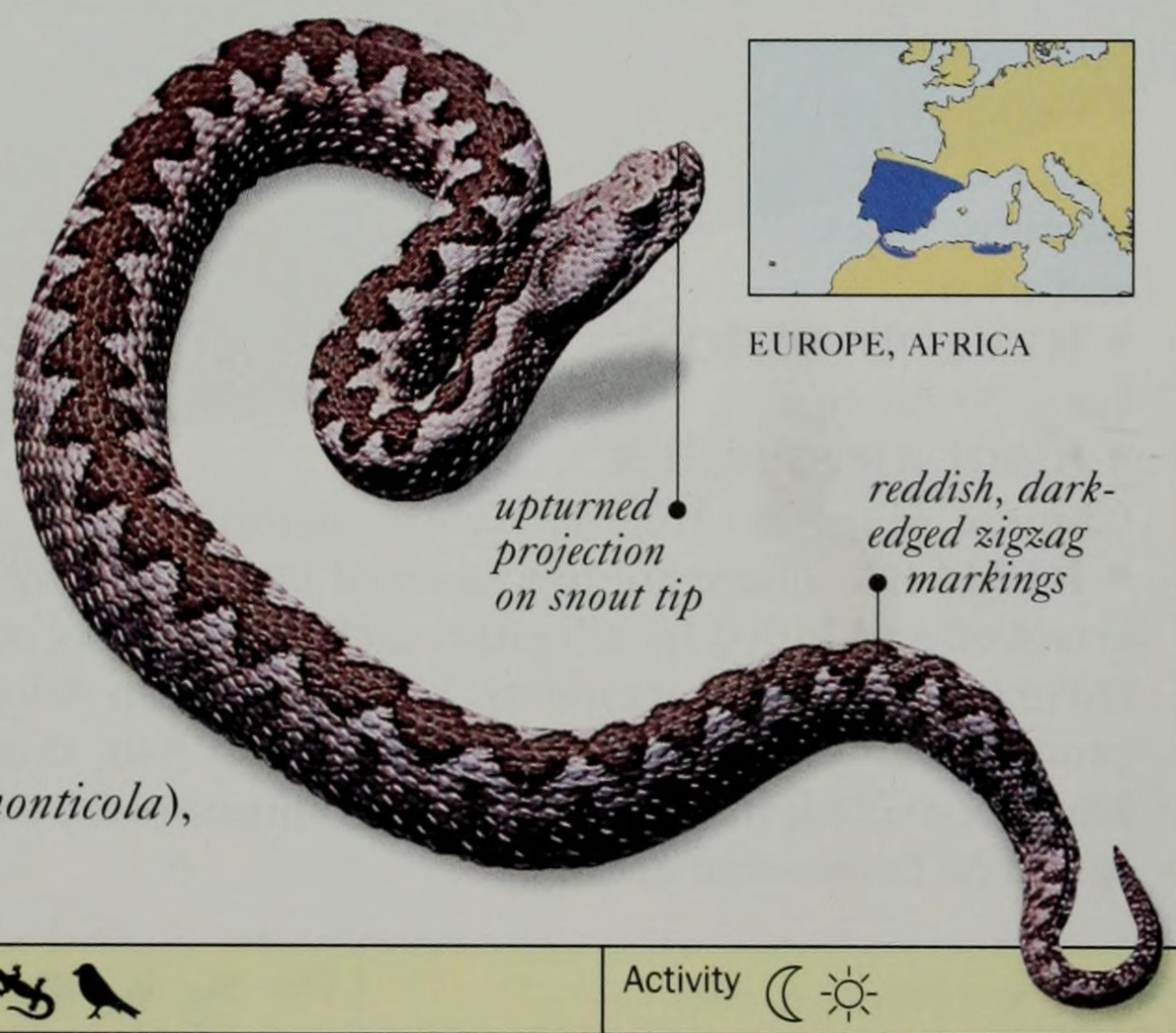
This viper resembles the Nose-horned Viper (*Vipera ammodytes*, above) in coloration and the presence of a snout projection, but Lataste's Viper is smaller, less dangerous, and occurs in southwest rather than southeast Europe. The coloration is gray to brown, with dark-edged, reddish zigzags.

• **OCCURRENCE** Spain, Portugal, and Morocco. On dry, wooded, rocky slopes.

• **REPRODUCTION** Live-bearing, 2–8 neonates.

• **SIMILAR SPECIES** Mountain Viper (*V. monticola*), Nose-horned Viper (*V. ammodytes*).

EUROPE, AFRICA



Length 24–30in (60–75cm)	Diet	Activity

CROCODILIANS

CROCODILES, alligators, and gharials together form a group known as the Crocodilians. The bodies of animals in this group are covered in a tough, leathery skin, which may be strengthened with plates (known as osteoderms, or bone-skin). Unable to sweat through their tough skins, crocodilians loose heat by "gaping" (resting with their mouths open), permitting moisture to evaporate from the mucous membranes to cool them down. Despite their almost primeval appearance, modern crocodilians are actually quite advanced, possessing an elaborate, four-chambered heart similar to that of a mammal. In fact, it is generally accepted by biologists that birds, rather than other reptiles, are the nearest living relatives of modern crocodilians. Except for the American Alligator (*Alligator mississippiensis*), all crocodilian species are endangered in at least part of their ranges, and some are threatened with extinction as a result of habitat destruction, hunting, or pollution.

The 23 living crocodilian species are often divided into three separate families (Alligatoridae, Crocodylidae, and Gavialidae), as in this book; however, they are sometimes placed in three subfamilies of a single family.

Family ALLIGATORIDAE	Species *Alligator mississippiensis*	Status Common

AMERICAN ALLIGATOR

Juvenile American Alligators are black with irregular yellow cross-bands but, as they mature, the yellow markings become completely obscured by black pigment and algae. The American Alligator's broad, rounded snout and coloration distinguishes it from the American Crocodile (*Crocodylus acutus*), which also inhabits southern Florida but is brown with a tapered snout. Male alligators are much larger than females. In the breeding season, the huge males bellow to attract a mate, curving the body concavely and thrusting the head and tail out of the water. As they bellow, small jets of water vibrate upward from the scales of the alligator's back. Mating takes place in the water, and female alligators lay their eggs in mounds of vegetational debris, guarding them throughout the 65-day gestation period. Juvenile alligators feed on invertebrates, frogs, and fish, but adults prey on turtles, waterbirds, and mammals.

• OCCURRENCE
S.E. US. In freshwater swamps, lakes, and rivers.

• REPRODUCTION
Lays 20–50 eggs.

• SIMILAR SPECIES
Chinese Alligator (*Alligator sinensis*, opposite).

• REMARK There are few cases of humans being attacked and killed by alligators compared to crocodiles, but there are occasional accidents. Since American Alligators became protected from wholesale hunting in the 1960s, their populations have recovered; indeed, "nuisance" alligators are now being removed from some areas.



Length 9–16½ft (2.8–5m)	Diet	Activity

Family ALLIGATORIDAE	Species *Alligator sinensis*	Status Endangered

CHINESE ALLIGATOR

The closest relative of the American Alligator (*Alligator mississippiensis*, opposite), the Chinese Alligator is greenish black, with yellow speckles and bars on its sides. Juveniles are more vivid, with yellow and black bands.

• **OCCURRENCE** China. In and around the Lower Yangtze River and in associated grass swamps and lakes.

• **REPRODUCTION** Lays 10–40 eggs.

• **SIMILAR SPECIES** American Alligator (*A. mississippiensis*, opposite).



ASIA



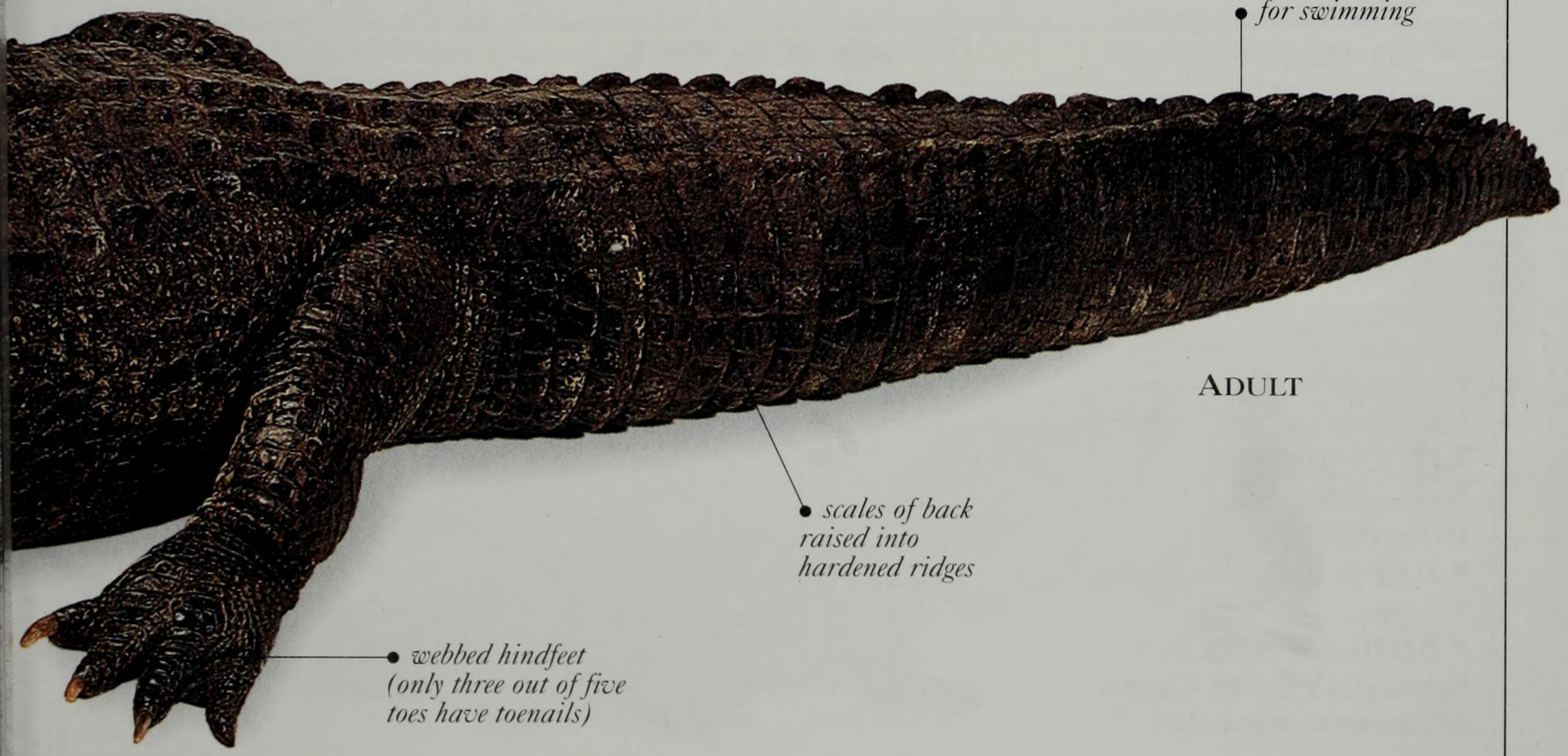
Length 5–6½ft (1.5–2m)	Diet	Activity ☾





N. AMERICA

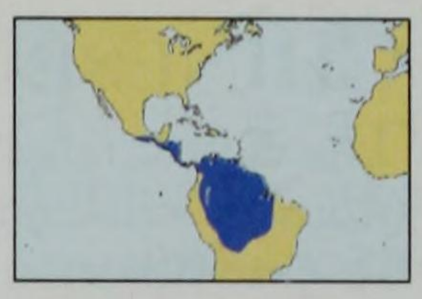
JUVENILE



ADULT

Family ALLIGATORIDAE	Species *Caiman crocodilus*	Status Common

SPECTACLED CAIMAN



C. & S. AMERICA

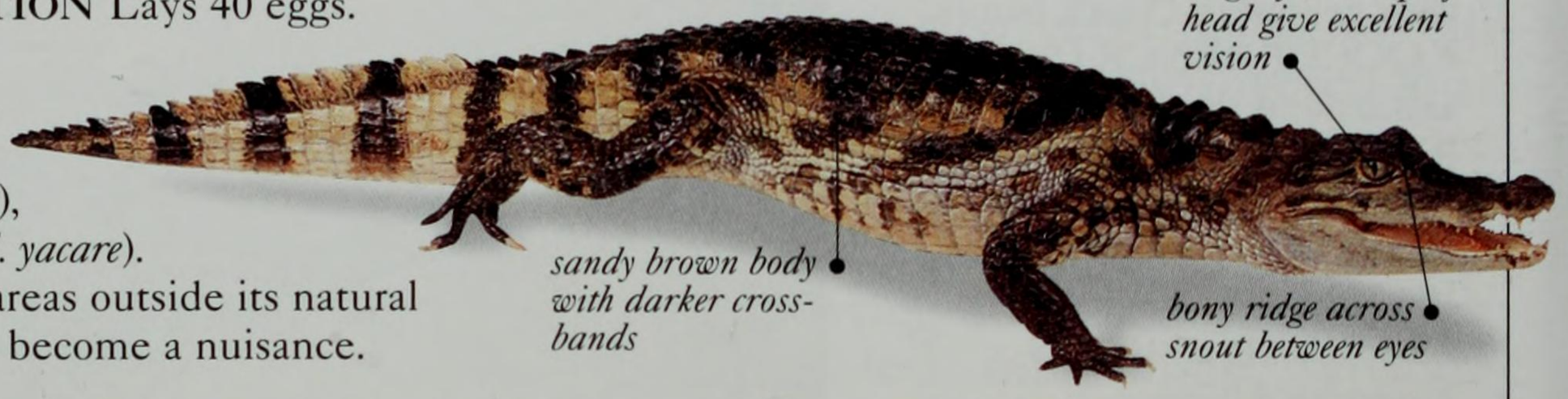
Sandy brown to dark brown in color, this stocky caiman has a broad snout with a bony ridge between the eyes, resembling the bridge of a pair of eyeglasses. Caimans are eaten by anacondas (*Eunectes* species).

• **OCCURRENCE** Central and South America. (Introduced to Florida and Cuba.) In lakes, rivers, and swamps.

• **REPRODUCTION** Lays 40 eggs.

• **SIMILAR SPECIES** Broad-snouted Caiman (*Caiman latirostris*), Yacare Caiman (*C. yacare*).

• **REMARK** In areas outside its natural range, it has now become a nuisance.



Length 8–10ft (2.5–3m)	Diet	Activity

Family ALLIGATORIDAE	Species *Melanosuchus niger*	Status Endangered

BLACK CAIMAN



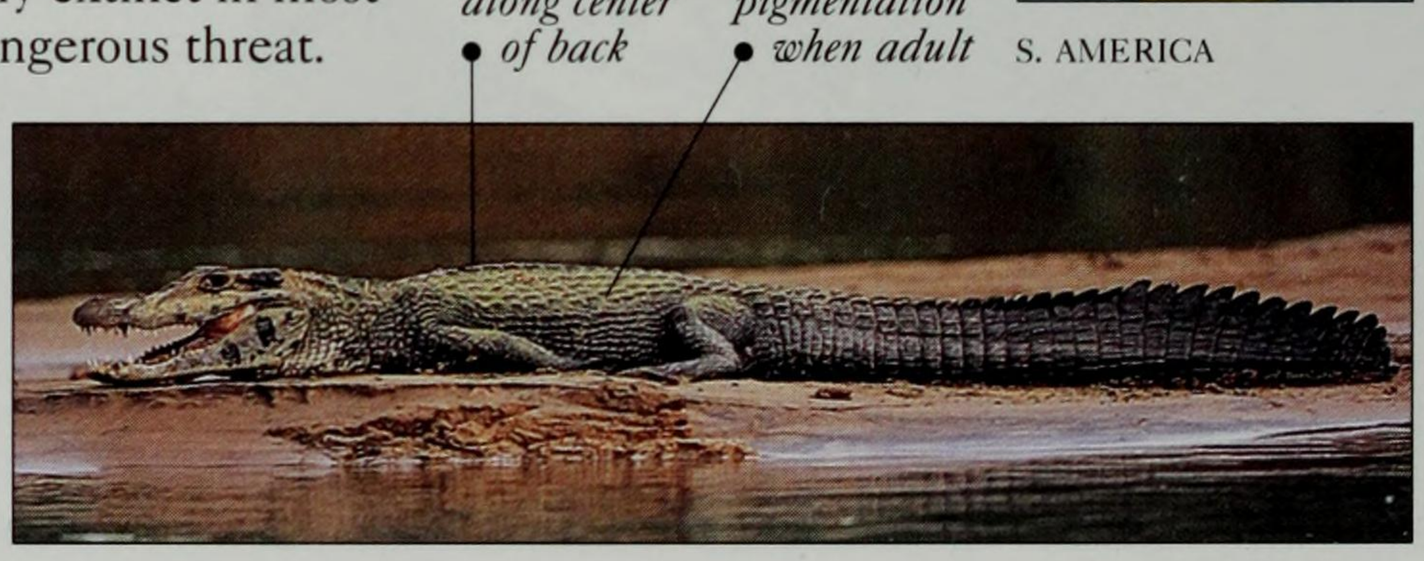
S. AMERICA

This species has a long, broad head and a raised ridge along its back. It is the largest caiman, and is the only one that can kill a human. It is nearly extinct in most of its range, but in Guyana it is a dangerous threat.

• **OCCURRENCE** South America. In lakes, rivers, swamps, and flooded grassland.

• **REPRODUCTION** Lays 50–65 eggs.

• **SIMILAR SPECIES** American Alligator (*Alligator mississippiensis*, pp.190–91).



Length 13–15ft (4–4.5m)	Diet	Activity

Family ALLIGATORIDAE	Species *Paleosuchus palpebrosus*	Status Common

CUVIER'S DWARF CAIMAN



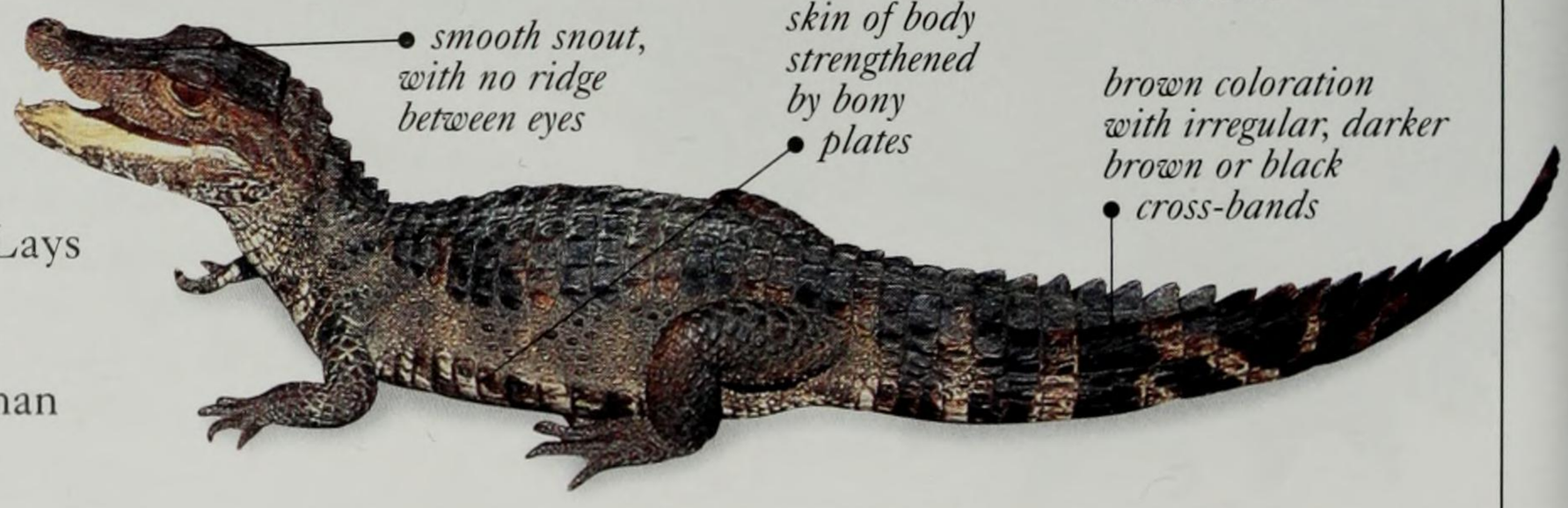
S. AMERICA

The skin on the body of this species – the smallest of the caimans – is reinforced with bony plates. Its coloring is brown with darker brown or black cross-bands. The nest is built from rotting vegetation and mud.

• **OCCURRENCE** N. South America. In flooded forest.

• **REPRODUCTION** Lays 12 eggs.

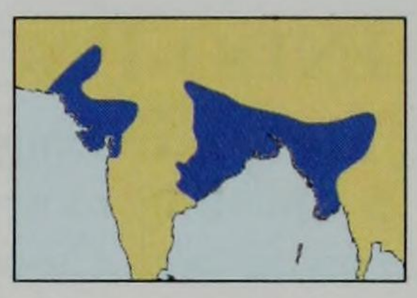
• **SIMILAR SPECIES** Schneider's Dwarf Caiman (*Paleosuchus trigonatus*).



Length 4–5ft (1.2–1.5m)	Diet	Activity

Family GAVIALIDAE	Species *Gavialis gangeticus*	Status Endangered

GANGES GHARIAL



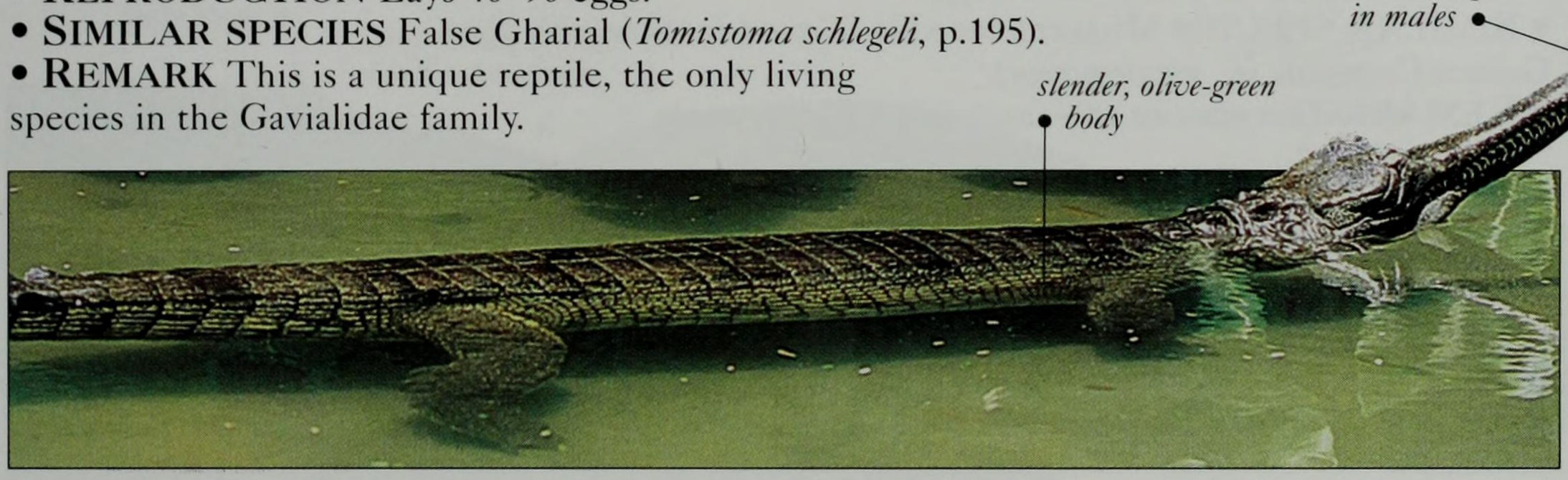
ASIA

Also known as the Gavial, this slender, olive-green species has long, narrow jaws that contain up to 100 teeth, helping to make it extremely proficient at catching fish. Adult males have a fleshy lobe on the snout tip, the purpose of which is unknown. Although it is one of the world's longest crocodilians, the Ganges Gharial is not reported to prey on humans. Recent conservation projects have reestablished populations in Nepal and India.

- **OCCURRENCE** S. Asia. In large rivers.
- **REPRODUCTION** Lays 40–90 eggs.
- **SIMILAR SPECIES** False Gharial (*Tomistoma schlegeli*, p.195).
- **REMARK** This is a unique reptile, the only living species in the Gavialidae family.

long, narrow snout, with bulbous tip in males

slender, olive-green body



Length 13–23ft (4–7m)	Diet	Activity

Family CROCODYLIDAE	Species *Crocodylus niloticus*	Status Common

NILE CROCODILE



AFRICA, MADAGASCAR

This large, immensely strong crocodile is olive-green to brown with black spots and netlike markings. The fourth tooth in the lower jaw protrudes through a notch in the upper jaw. Adults, weighing up to one ton, prey on wildebeest, zebras, and buffalo; they also kill hippopotomi and lions, as well as humans. Females dig nesting chambers in sandy riverbanks. The main risks to the eggs are flooding and the Nile Monitor Lizard (*Varanus niloticus*, p.100).

- **OCCURRENCE** Africa and Madagascar. In rivers and lakes.
- **REPRODUCTION** Lays 25–100 eggs.
- **SIMILAR SPECIES** West African Long-snouted Crocodile (*Crocodylus cataphractus*).
- **REMARK** These crocodiles are now virtually extinct in the Nile River.

powerful tail aids swimming

fourth tooth of lower jaw visible when mouth closed

olive-green to brown body with black markings

Length 16½–21ft (5–6.5m)	Diet	Activity

Family CROCODYLIDAE	Species *Crocodylus porosus*	Status Locally common

INDO-PACIFIC CROCODILE



ASIA, OCEANIA

The largest living reptile, the olive-green Indo-Pacific or Saltwater Crocodile is one of the most powerful animals in the world. Sometimes called the Naked-neck Crocodile, this is the only species without large scales on the back of its neck. A strong swimmer, this ocean-going species has been recorded from India to Australia and from the Cocos Islands in the Indian Ocean to Fiji in the Pacific. Numbers have declined in parts of its range.

• **OCCURRENCE** S. and S.E. Asia to N. Australia and S.W. Pacific. In coastal rivers, lagoons, and estuaries (occasionally in open oceans).

• **REPRODUCTION** Lays 20–90 eggs.

• **SIMILAR SPECIES** Mugger Crocodile (*Crocodylus palustris*), New Guinea Crocodile (*C. novaeguineae*).

• **REMARK** This species can easily kill and eat people.

olive-brown body, often covered in green algae

teeth may be 4–5in (10–13cm) long

opening mouth wide helps to lose heat

Length 23–30ft (7–9m)	Diet	Activity

Family CROCODYLIDAE	Species *Crocodylus rhombifer*	Status Endangered

CUBAN CROCODILE

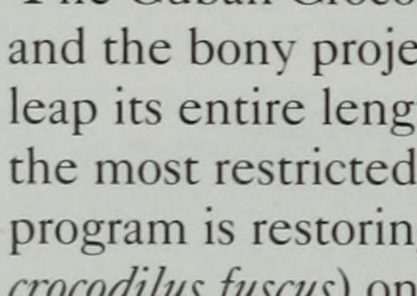
The Cuban Crocodile can be identified by its black-and-yellow coloration, and the bony projections above its eyes. It is an aggressive species that can leap its entire length out of the water to capture prey. The crocodile with the most restricted range, it was almost extinct by 1959 but a conservation program is restoring populations. Introduced Brown Caimans (*Caiman crocodilus fuscus*) on Isla de la Juventud prey on juveniles.

• **OCCURRENCE** Cuba. In freshwater swamps.

• **REPRODUCTION** Lays 20–50 eggs.

• **SIMILAR SPECIES** American Crocodile (*Crocodylus acutus*).

• **REMARK** Cuban Crocodiles may hybridize with American Crocodiles (*C. acutus*).



CUBA

black-and-yellow coloration obscured in adults

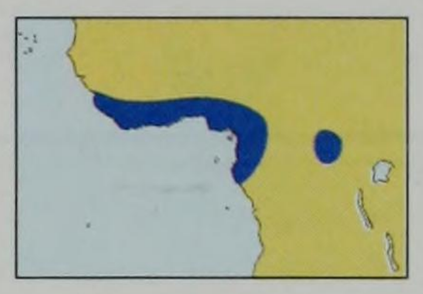
short, powerful back legs allow leaps over 6½ft (2m)

bony projections on head resemble horns

Length 10–11½ft (3–3.5m)	Diet	Activity

Family CROCODYLIDAE	Species *Osteolaemus tetraspis*	Status Endangered

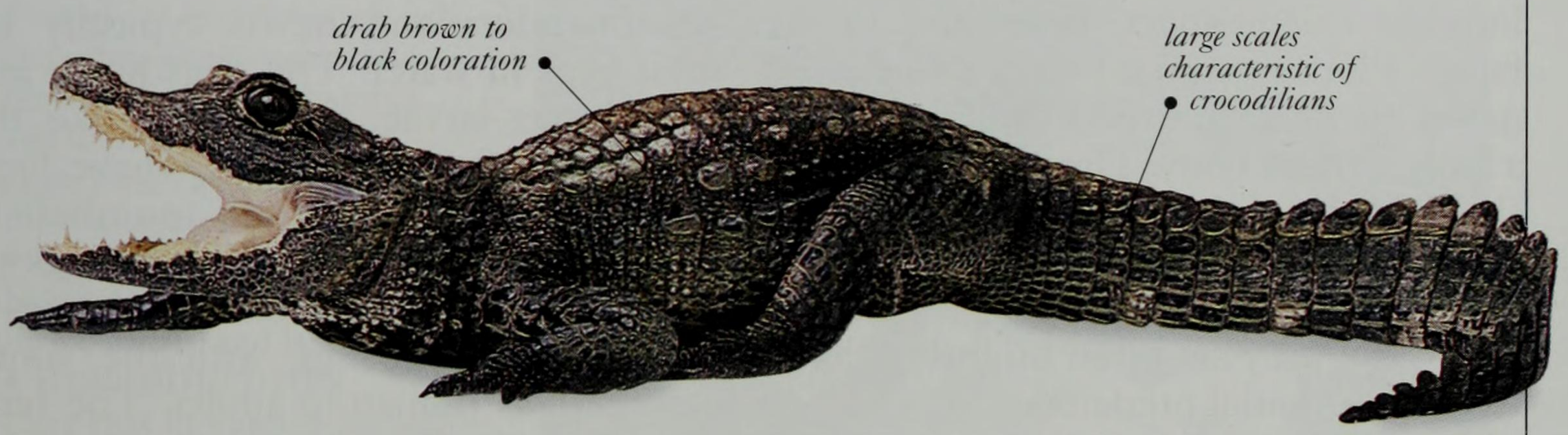
DWARF CROCODILE



AFRICA

The smallest crocodile, this is a secretive, short-headed species with two distinctly separate populations. Adults are black-brown but juveniles are light brown with black spots and bars. When threatened, the Dwarf Crocodile will dive into the water and hide in holes under the bank.

- **OCCURRENCE** W. and C. Africa. In rainforest swamps, ponds, and slow-moving rivers.
- **REPRODUCTION** Lays 10–17 eggs.
- **SIMILAR SPECIES** Dwarf caimans (*Paleosuchus* species, p.192).



Length 5–6½ft (1.5–2m)	Diet	Activity

Family CROCODYLIDAE	Species *Tomistoma schlegeli*	Status Endangered

FALSE GHARIAL



ASIA

This species resembles the Ganges Gharial (*Gavialis gangeticus*, p.193), but its head tapers more gradually to a narrow snout and it lacks the bulbous snout tip that male Ganges Gharials have. The coloration is dark brown with indistinct black bars across the back. Uniquely among crocodilians, the eyes have yellow-brown irises. This species is extremely threatened. It may now be extinct in southern Thailand and on the verge of extinction in Malaysia. Threats include illegal hunting and habitat destruction.

- **OCCURRENCE** S.E. Asia. In freshwater swamps, lakes, and rivers.
- **REPRODUCTION** Lays 20–60 eggs.
- **SIMILAR SPECIES** Ganges Gharial (*G. gangeticus*, p.193).



Length 13–18ft (4–5.5m)	Diet	Activity Unknown

AMPHIBIANS

NEWTS AND SALAMANDERS

THERE ARE FIVE families in the order Urodela, consisting of 450 species of newts and salamanders (over half of the total number of species are lungless salamanders, belonging to the family Plethodontidae). Salamanders and newts are characterized by a long tail and a long, slender body. They have relatively short limbs, which are all of similar length. Coloration is very variable. Some species secrete poison from glands in their skin; they are often brightly colored to warn potential predators.

Newts and salamanders are usually active at night. They mostly crawl on the ground, hiding by day under logs and rocks or in the burrows of other animals. A few species can climb trees and many are good swimmers. Some permanently aquatic salamanders resemble eels.

Salamanders and newts typically lay their eggs in water. The eggs hatch into carnivorous larvae, which – unlike the tadpoles of frogs and toads – have long, slender bodies. A large number of salamanders, however, lay their eggs on land. The larval phase of such species is completed in the egg with the young emerging as miniature adults. The term "newt" generally refers to those species that return to water for a period of weeks or months each year to breed.

Family SIRENIDAE	Species *Siren lacertina*	Status Locally common

GREATER SIREN

The Greater Siren is a large, eellike animal with small forelimbs and no hindlimbs. The upper body is gray with dark spots, and the sides are lighter with irregular yellow-brown markings. Its finlike tail is laterally compressed, with a spine running through the center. This species uses its shovel-shaped head to search for food in the mud. It feeds on a variety of prey, especially snails and clams.

• OCCURRENCE S.E. US. In shallow, muddy, well-vegetated rivers, canals, lakes, ponds, and ditches.

• REPRODUCTION Lays eggs in water in spring.

• REMARK In drought conditions, sirens are able to survive for up to two years, encased in a cocoon in the mud, feeding on their very large fat reserves.



N. AMERICA



Length 20–35in (50–90cm)	Habit Entirely aquatic	Activity ☾

Family PROTEIDAE	Species *Necturus maculosus*	Status Locally common

MUDPUPPY

Also known as the Waterdog, this large, aggressive salamander is usually gray or brown with paler markings. It has prominent, bushy, reddish brown external gills on either side of its head. Its long, flattened body shape enables it to hide under logs and rocks by day. The Mudpuppy is a voracious predator, feeding on a variety of invertebrates, fish, and other amphibians. The female digs a nest chamber and defends her clutch of eggs, which are attached to the underside of a log or rock.

• **OCCURRENCE** E. and C. North America. In streams, rivers, canals, and lakes.

• **REPRODUCTION** Lays eggs in water in autumn and winter.



N. AMERICA



Length 8–20in (20–50cm)	Habit Entirely aquatic	Activity ☾

Family CRYPTOBRANCHIDAE	Species *Cryptobranchus alleganiensis*	Status Rare

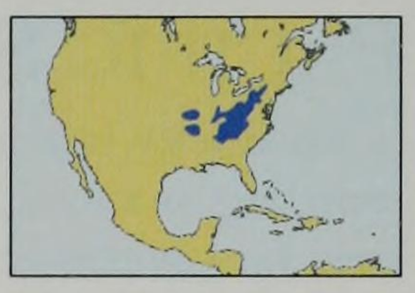
HELLBENDER

This large salamander has distinctive folds of skin along its brown, mottled body. The flattened head and body enable it to force its way beneath rocks, and its noxious, slimy skin secretion protects it from predators. In the breeding season, the male excavates a space beneath a rock into which it lures or drives a female. The female is prevented from leaving until she has laid a long string of eggs, onto which the male releases his sperm. The male then drives the female away and guards the eggs until they hatch.

• **OCCURRENCE** E. US. In large, rocky, fast-flowing streams.

• **REPRODUCTION** Lays eggs in water in autumn.

• **REMARK** Due to pollution, this once common species is now increasingly rare.



N. AMERICA



Length 12–30in (30–75cm)	Habit Entirely aquatic	Activity ◯

Family PROTEIDAE	Species *Proteus anguinus*	Status Rare

OLM

The Olm is an exclusively cave-dwelling salamander that never leaves the water. It is usually white in color, although some are gray, pink, or yellow. Olms do not metamorphose into adults, but become sexually mature while in the larval state. They retain their external gills throughout life. Their tails are large, enabling them to swim well, and their eyes are rudimentary, suited to the permanent darkness in which they live. During courtship, the male wafts odors by fanning his tail in front of the female's snout. Fertilization is internal, and the female lays up to 70 eggs, attached to the underside of a rock.

• OCCURRENCE Slovenia to Montenegro. In underground streams and pools in limestone caves.

• REPRODUCTION Lays eggs in water in spring.



EUROPE



Length 8–12in (20–30cm)	Habit Entirely aquatic	Activity ◯

Family DICAMPTODONTIDAE	Species *Dicamptodon tenebrosus*	Status Locally common

PACIFIC SALAMANDER

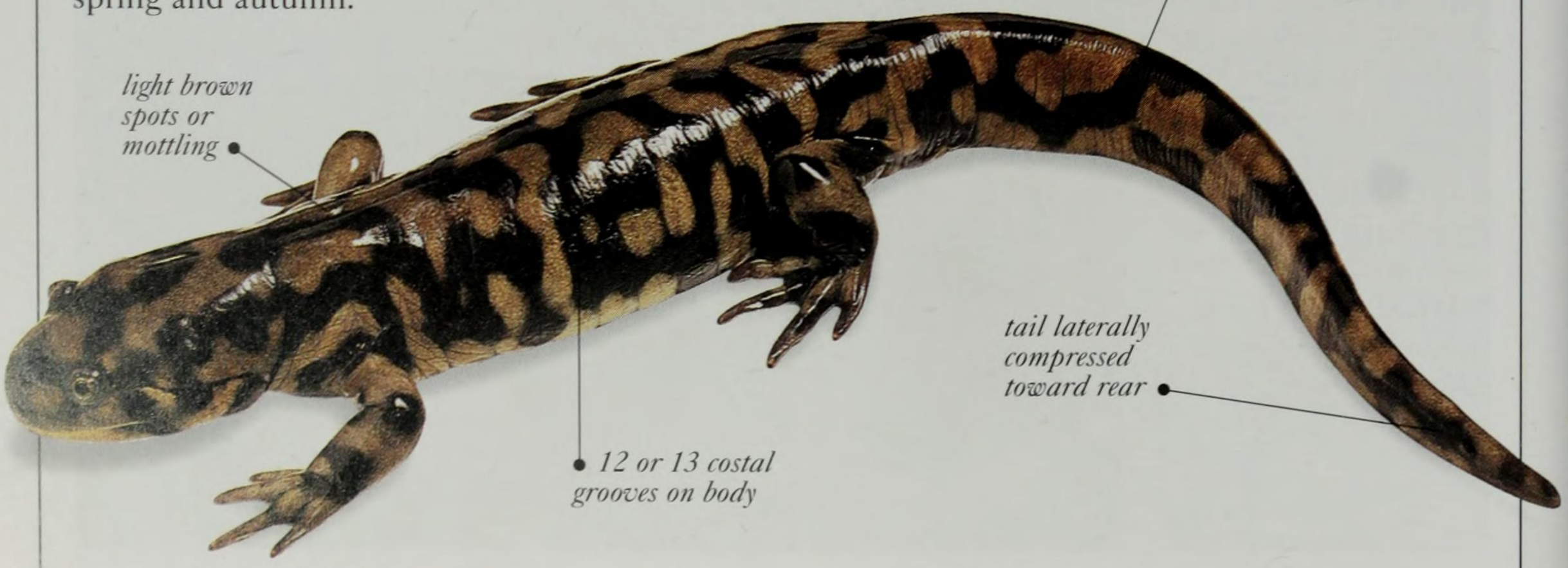
This stocky salamander is dark brown to black, with light brown mottling or spots. It progresses through an aquatic larval stage that lasts for several years. While some individuals become terrestrial at maturity, returning to water to breed, others never leave the water and retain their gills into adulthood. Those that leave the water are the largest terrestrial salamanders in the world.

• OCCURRENCE N.W. US. In and around streams in coastal forest.

• REPRODUCTION Lays eggs in water in spring and autumn.



N. AMERICA



Length 6¾–13in (17–34cm)	Habit Terrestrial or aquatic	Activity ☾

Family AMPHIUMIDAE	Species *Amphiuma tridactylum*	Status Locally common

THREE-TOED AMPHIUMA



N. AMERICA

This large salamander, with slimy skin, a long tail, and tiny limbs (each with three toes), is similar to an eel in appearance. It has a black, gray, or brown upper side, and a pale gray underside. Males usually breed every year, females every other year; the female guards the eggs until they hatch. The Three-toed Amphiuma can deliver a painful bite.

• **OCCURRENCE** S. and C. US. On coastal plains, in ditches, swamps, streams, and ponds.

• **REPRODUCTION** Lays eggs in water in winter and spring.

slimy skin

black, gray, or brown coloration above, pale gray below

very small limbs, with three toes on each limb



Length 1½–3½ft (0.4–1.1m)	Habit Mostly aquatic	Activity ◯

Family SALAMANDRIDAE	Species *Chioglossa lusitanica*	Status Rare

GOLDEN-STRIPED SALAMANDER



EUROPE

With its slender body, long tail, and rapid movement, the Golden-striped Salamander resembles a lizard. Its coloration is dark brown, with two golden brown stripes on the back that merge to form one stripe on the tail. This salamander has large eyes and a long, sticky tongue for catching prey. If attacked, it often drops its tail; this will regrow but never reaches its previous length. The larvae remain in water over winter.

• **OCCURRENCE** N. Portugal and N.W. Spain. In wet, mountainous areas.

• **REPRODUCTION** Lays eggs in water in summer and autumn.

very long tail

dark brown coloration, with golden brown stripes



Length 4¾–5½in (12–14cm)	Habit Mostly terrestrial	Activity ☾

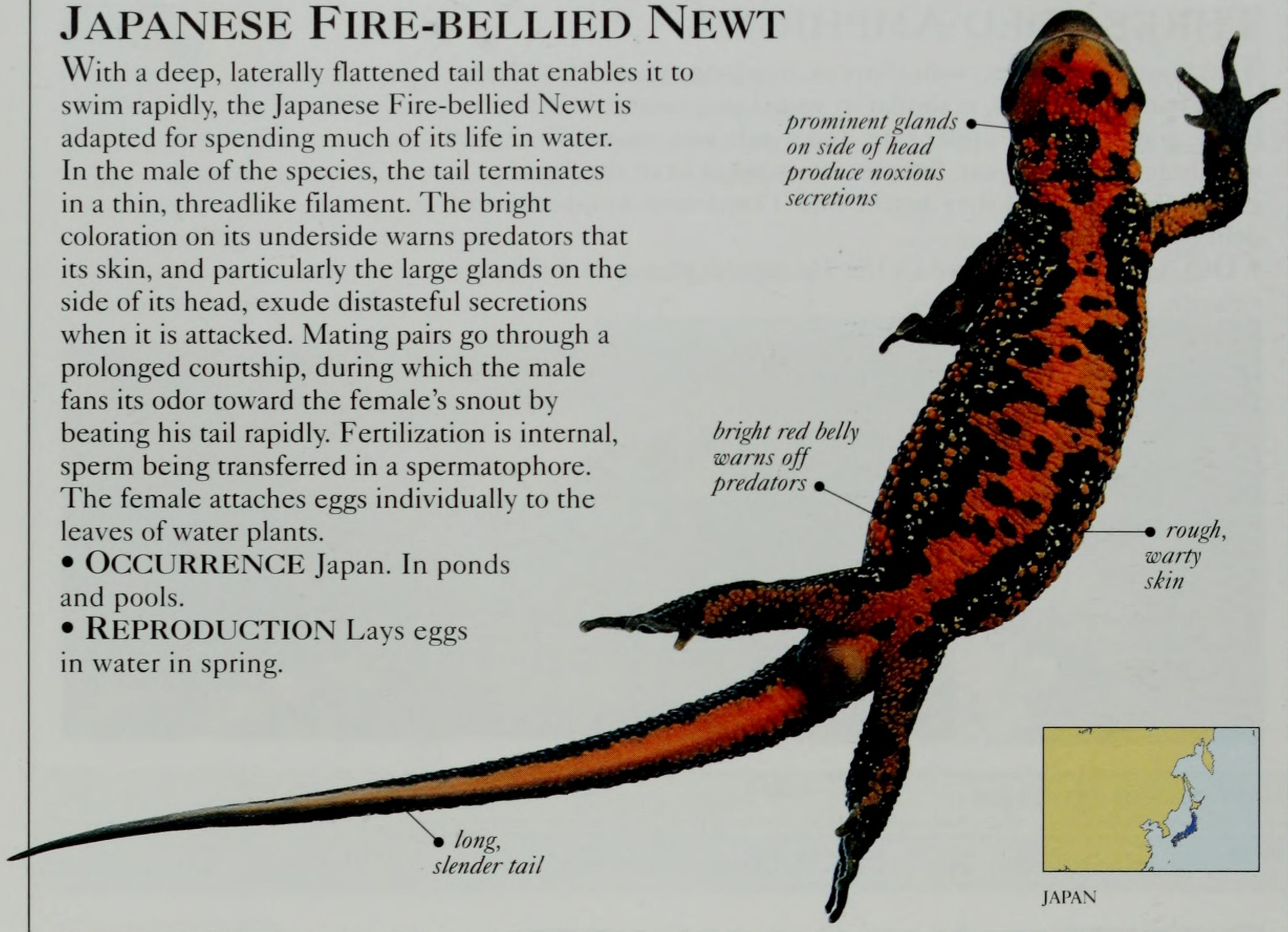
Family SALAMANDRIDAE	Species *Cynops pyrrhogaster*	Status Locally common

JAPANESE FIRE-BELLIED NEWT

With a deep, laterally flattened tail that enables it to swim rapidly, the Japanese Fire-bellied Newt is adapted for spending much of its life in water. In the male of the species, the tail terminates in a thin, threadlike filament. The bright coloration on its underside warns predators that its skin, and particularly the large glands on the side of its head, exude distasteful secretions when it is attacked. Mating pairs go through a prolonged courtship, during which the male fans its odor toward the female's snout by beating his tail rapidly. Fertilization is internal, sperm being transferred in a spermatophore. The female attaches eggs individually to the leaves of water plants.

• OCCURRENCE Japan. In ponds and pools.

• REPRODUCTION Lays eggs in water in spring.



JAPAN

Length 3½–4¾in (9–12cm)	Habit Mostly aquatic	Activity ◯

Family SALAMANDRIDAE	Species *Pachytriton brevipes*	Status Locally common

TSITOU NEWT

Adapted for a mostly aquatic life, the Tsitou Newt has a large, paddlelike tail, which is rounded at the tip, and short legs and toes. The tail enables it to swim powerfully in flowing water, and lobes of skin on its lips help it to suck in its invertebrate prey. Potential predators are warned about its distasteful skin secretion by the bright yellow or orange coloration on its belly. Egg fertilization is internal, sperm being transferred from the male to the female in a spermatophore.

• OCCURRENCE S.E. China. In streams in hills and mountains.

• REPRODUCTION Lays eggs in water in summer.



ASIA



Length 5½–7in (14–18cm)	Habit Mostly aquatic	Activity ☾

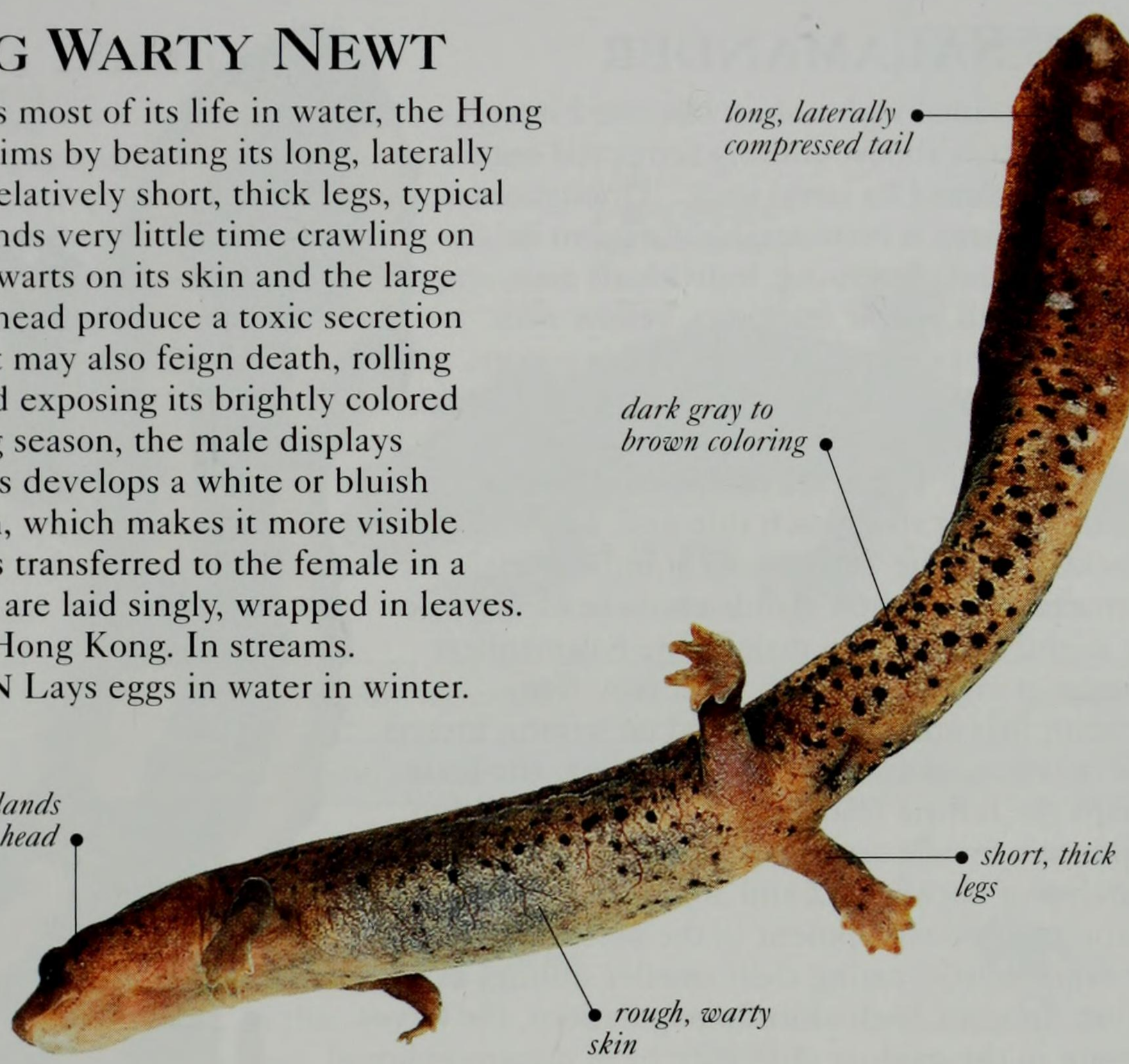
Family SALAMANDRIDAE	Species *Paramesotriton hongkongensis*	Status Locally common

HONG KONG WARTY NEWT

A species that spends most of its life in water, the Hong Kong Warty Newt swims by beating its long, laterally flattened tail. It has relatively short, thick legs, typical of an animal that spends very little time crawling on land. The numerous warts on its skin and the large parotid glands on its head produce a toxic secretion when it is attacked; it may also feign death, rolling over onto its back and exposing its brightly colored belly. In the breeding season, the male displays by beating its tail; this develops a white or bluish stripe along its length, which makes it more visible in dim light. Sperm is transferred to the female in a spermatophore. Eggs are laid singly, wrapped in leaves.

• **OCCURRENCE** Hong Kong. In streams.

• **REPRODUCTION** Lays eggs in water in winter.





HONG KONG

Length 4¾–6¼in (12–16cm)	Habit Mostly aquatic	Activity ☾

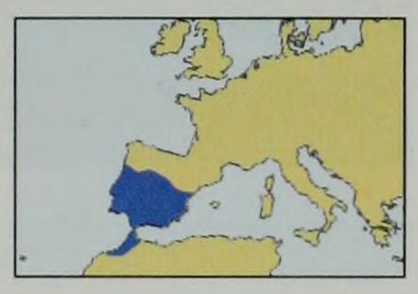
Family SALAMANDRIDAE	Species *Pleurodeles waltl*	Status Locally common

SHARP-RIBBED NEWT

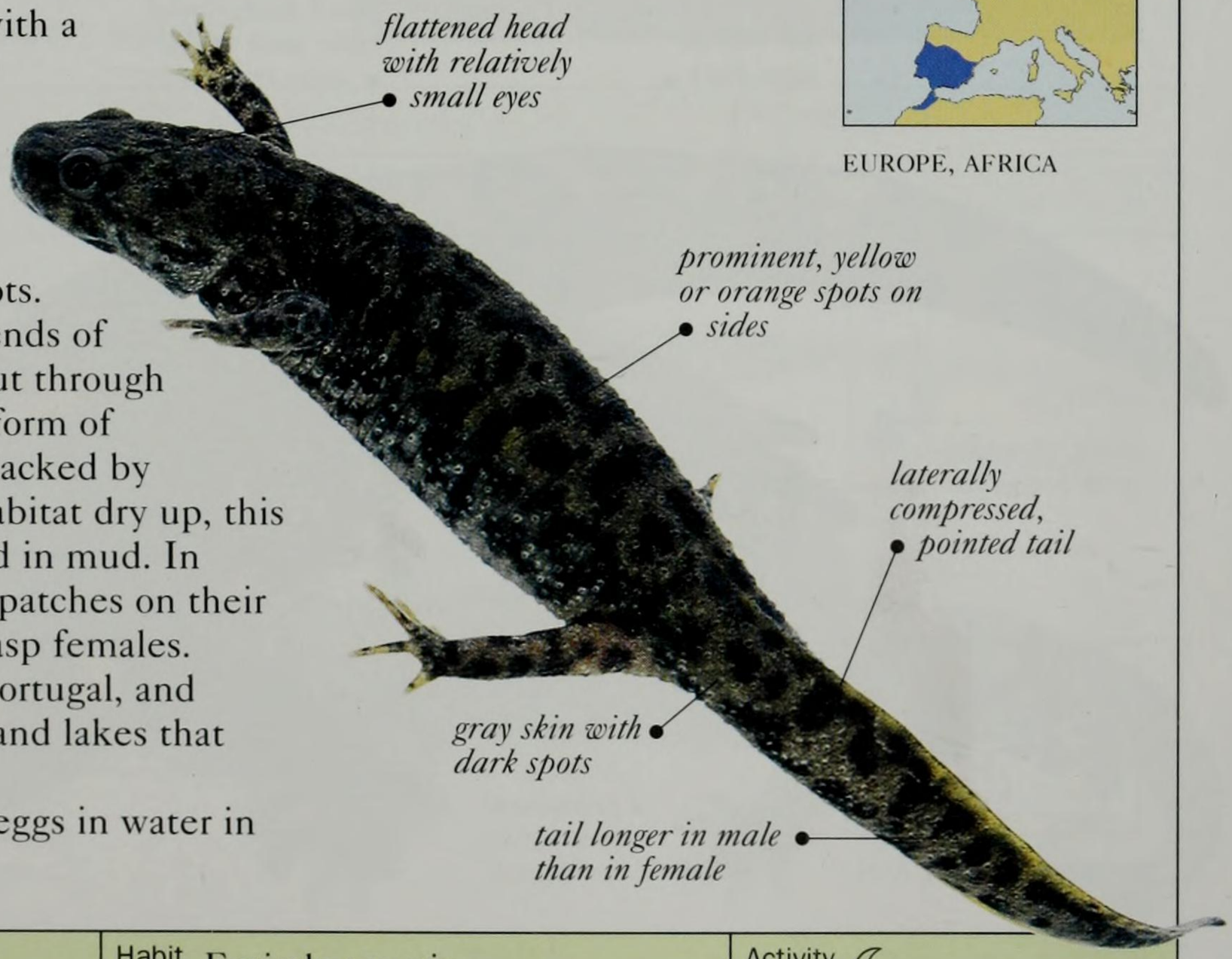
A large, stout-bodied newt with a rough skin, the Sharp-ribbed Newt is a voracious predator of aquatic invertebrates. Along each side of the body there is a row of large, pale-colored spots. These cover the sharpened ends of the ribs, which are pushed out through the skin, affording a unique form of protection if the animal is attacked by predators. Should its pond habitat dry up, this newt is able to survive buried in mud. In spring, males develop rough patches on their limbs that enable them to clasp females.

• **OCCURRENCE** Spain, Portugal, and Morocco. In ditches, ponds, and lakes that contain water plants.

• **REPRODUCTION** Lays eggs in water in spring and summer.



EUROPE, AFRICA



Length 6–12in (15–30cm)	Habit Entirely aquatic	Activity ☾

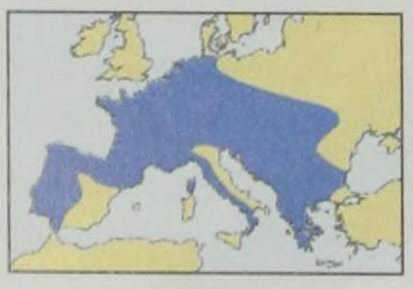
Family SALAMANDRIDAE	Species *Salamandra salamandra*	Status Locally common

FIRE SALAMANDER

A robust animal with a short tail, the Fire Salamander is almost entirely terrestrial once it has completed its larval stage. Throughout its range, there is considerable variation in coloration and patterning: individuals may be black with yellow markings, yellow with black markings, or occasionally red or orange. The limbs are short and stout, with broad toes, and the tail is cylindrical in shape and shorter than the body. There are two rows of poison glands running along each side and, when attacked, the Fire Salamander squirts toxins from the large parotid glands on its head. Females are slightly larger than males. Fire Salamanders emerge at night, especially after rain, from beneath logs and stones, to feed on worms, insects, insect larvae, and slugs. During mating, the male grasps the female from below. The eggs develop inside the female and are released as larvae (in clutches of between 12 and 50) into a pond or stream. During their development in the oviduct, larvae may be cannibalistic, eating their smaller siblings as eggs or larvae. In some high-altitude populations, the larvae remain in the oviduct until they have metamorphosed into the adult form.

• **OCCURRENCE** Europe, N.W. Africa, and S.W. Asia. In woodland on hills and mountains.
• **REPRODUCTION** Lays larvae in water in spring and summer.
• **SIMILAR SPECIES** Alpine Salamander (*Salamandra atra*).





EUROPE, AFRICA, ASIA

Length 7–11in (18–28cm)	Habit Mostly terrestrial	Activity ☾

Family SALAMANDRIDAE	Species *Taricha torosa*	Status Common

California Newt

This slender newt is brown to brick-red and has rough, warty skin. During the breeding season, males lose their rough texture and slender shape and become smoother and fatter than females. Both sexes possess nerve toxins in the skin to ward off predators. Eggs are laid in ponds, lakes, and streams, attached to vegetation.

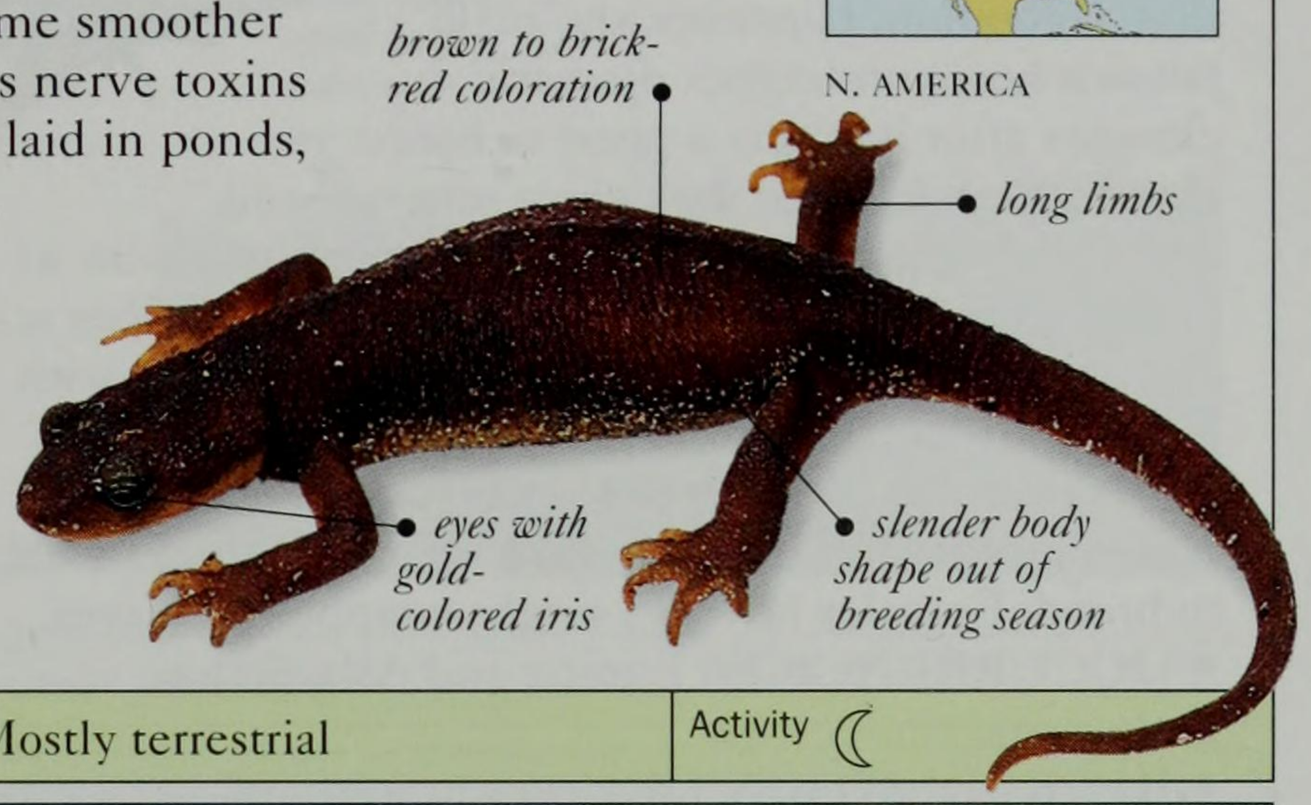
• **Occurrence** California, US. Grasslands, chaparral, and woodland in hills and mountains.

• **Reproduction** Lays eggs in water in winter and spring.

• **Similar species** Rough-skinned Newt (*Taricha granulosa*).



N. AMERICA



Length 4¾–8in (12–20cm)	Habit Mostly terrestrial	Activity ☾

Family SALAMANDRIDAE	Species *Triturus alpestris*	Status Locally common

Alpine Newt

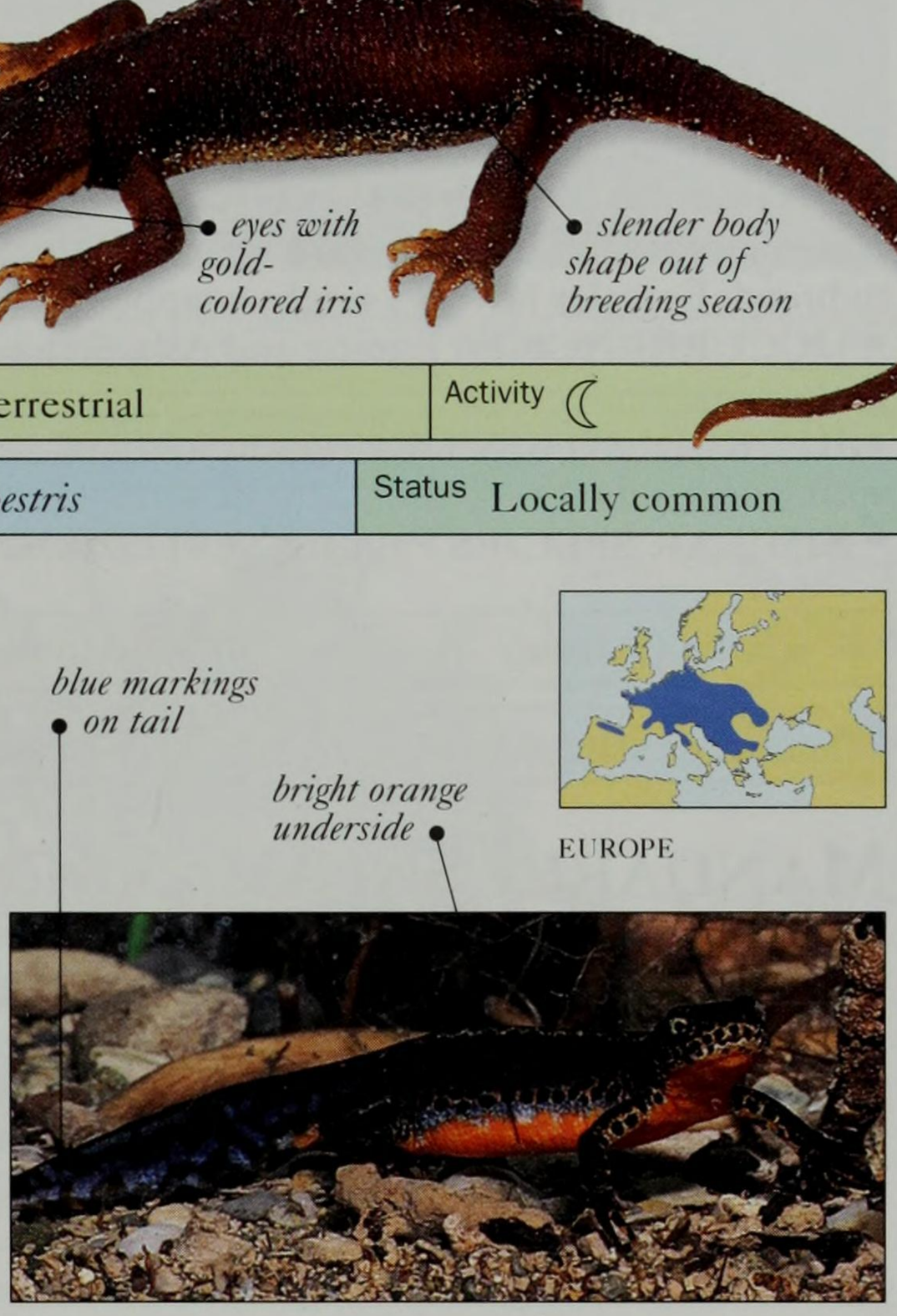
Despite its name, this brightly colored, blue, orange, black, and brown newt is found in lowland areas over much of Europe. In the breeding season, the male becomes more brightly colored and develops a low crest along the back. Each egg is wrapped in a leaf.

• **Occurrence** Europe. Below ground and under logs (found in mountains only in southern parts of its range).

• **Reproduction** Lays eggs in water in spring and summer.

• **Remark** Some populations (e.g. Balkans) have external gills and are entirely aquatic.

EUROPE



Length 2½–4¾in (6–12cm)	Habit Mostly terrestrial	Activity ☾

Family SALAMANDRIDAE	Species *Triturus marmoratus*	Status Locally common

Marbled Newt

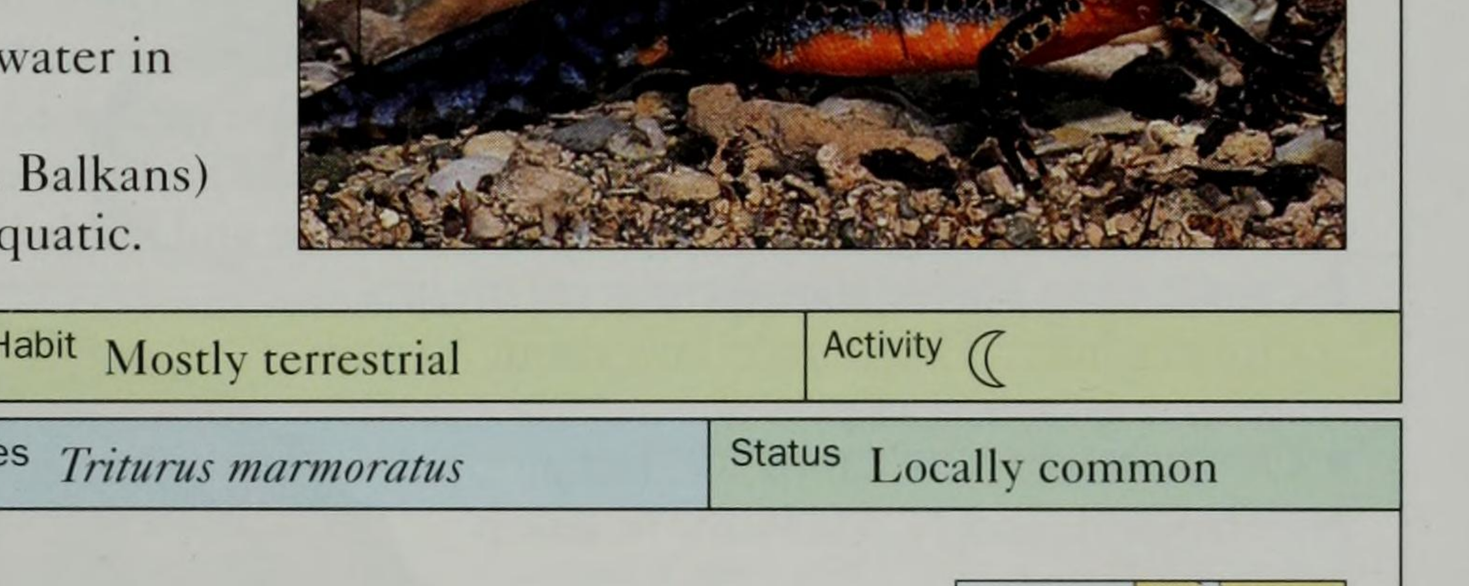
The green coloration of the Marbled Newt distinguishes it from other European newts. In the breeding season, the green color becomes more vivid and the male develops a large dorsal crest, decorated with vertical black and white stripes. The female (shown here) has a red line down the middle of the back.

• **Occurrence** Spain and S. France. In woodland, heathland, and hedgerows.

• **Reproduction** Lays eggs in water in spring and summer.



EUROPE



Length 4–5½in (10–14cm)	Habit Mostly terrestrial	Activity ◑

Family SALAMANDRIDAE	Species *Triturus vulgaris*	Status Locally common

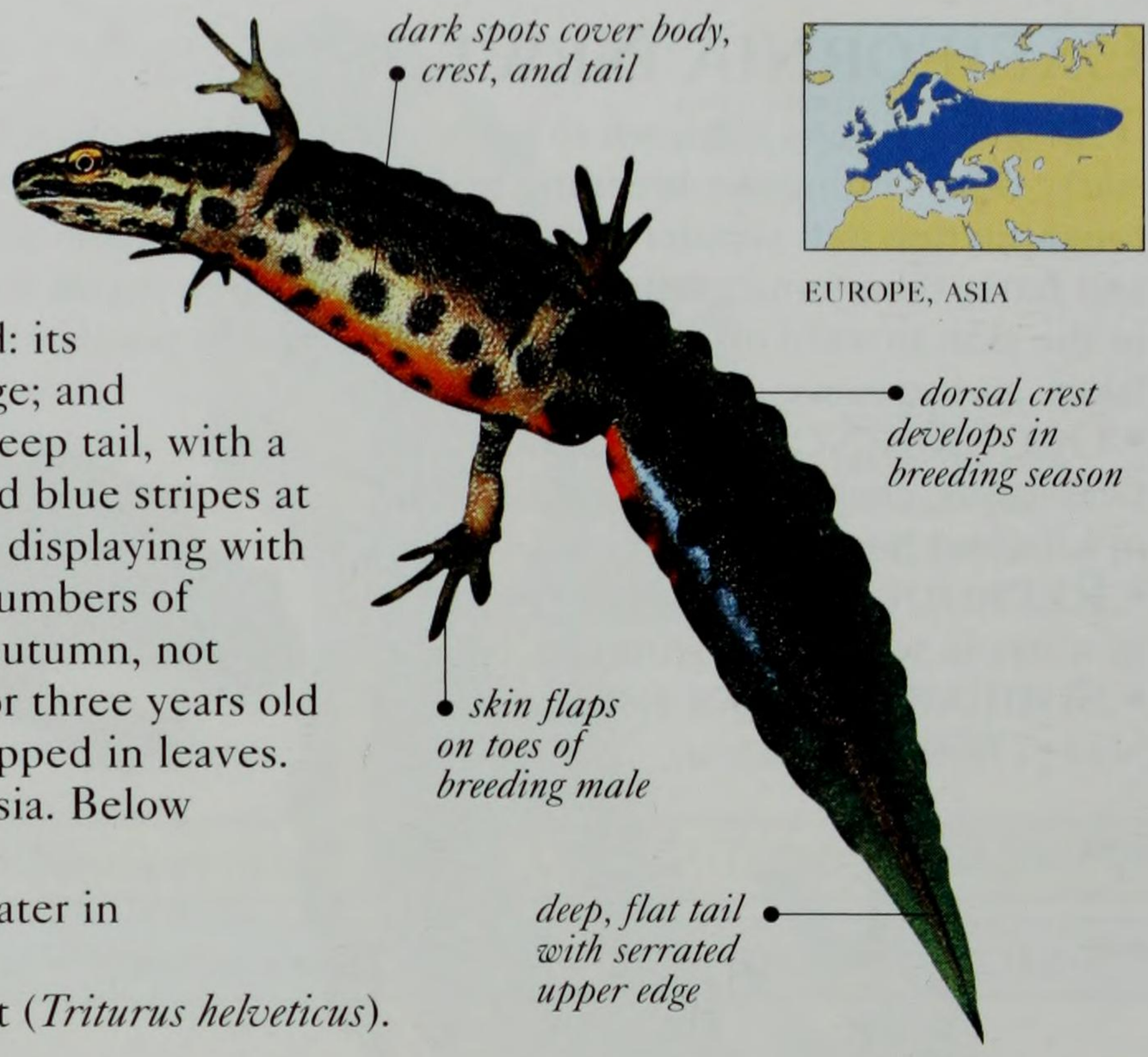
SMOOTH NEWT

Outside the breeding season, male and female Smooth Newts have drab coloration. However, the male (shown here) undergoes dramatic changes after it enters a pond to breed: its skin turns pale; large dark spots emerge; and it develops a large dorsal crest and a deep tail, with a serrated upper edge and bright red and blue stripes at the base. Courtship involves the male displaying with his tail in front of the female. Large numbers of carnivorous larvae leave the water in autumn, not returning to water until they are two or three years old to breed. Females lay eggs singly, wrapped in leaves.

• **OCCURRENCE** W. Europe and Asia. Below ground and under logs.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **SIMILAR SPECIES** Palmate Newt (*Triturus helveticus*).



EUROPE, ASIA

Length 2¾–4in (7–10cm)	Habit Mostly terrestrial	Activity ◑

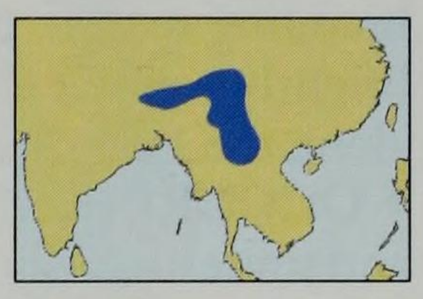
Family SALAMANDRIDAE	Species *Tylototriton verrucosus*	Status Locally common

MANDARIN SALAMANDER

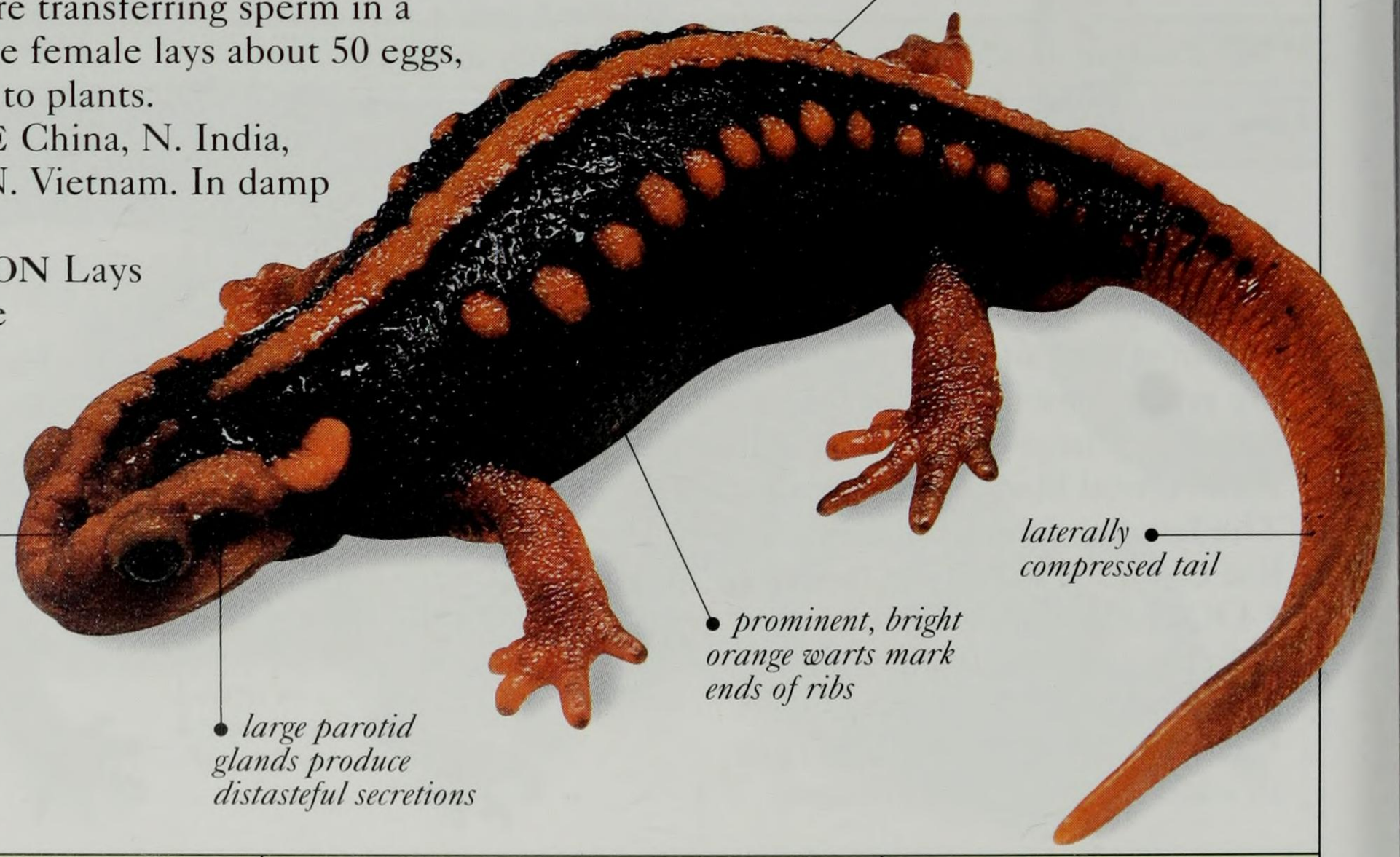
Also known as the Crocodile Newt, this robust animal, with rough, warty skin, lives most of its life on land but migrates to ponds to breed during the monsoon. It has a dark brown body and a bright orange head and tail. The orange dorsal ridge and large orange warts signal that the Mandarin Salamander will exude distasteful secretions if attacked. These are produced in the large parotid glands on either side of the head and in the skin. During mating, the male grasps the female and holds her for some time before transferring sperm in a spermatophore. The female lays about 50 eggs, which are attached to plants.

• **OCCURRENCE** China, N. India, N. Thailand, and N. Vietnam. In damp montane forest.

• **REPRODUCTION** Lays eggs in water in the rainy season.



ASIA



Length 4¾–7in (12–18cm)	Habit Mostly terrestrial	Activity ☾

Family AMBYSTOMATIDAE	Species *Ambystoma macrodactylum*	Status Locally common

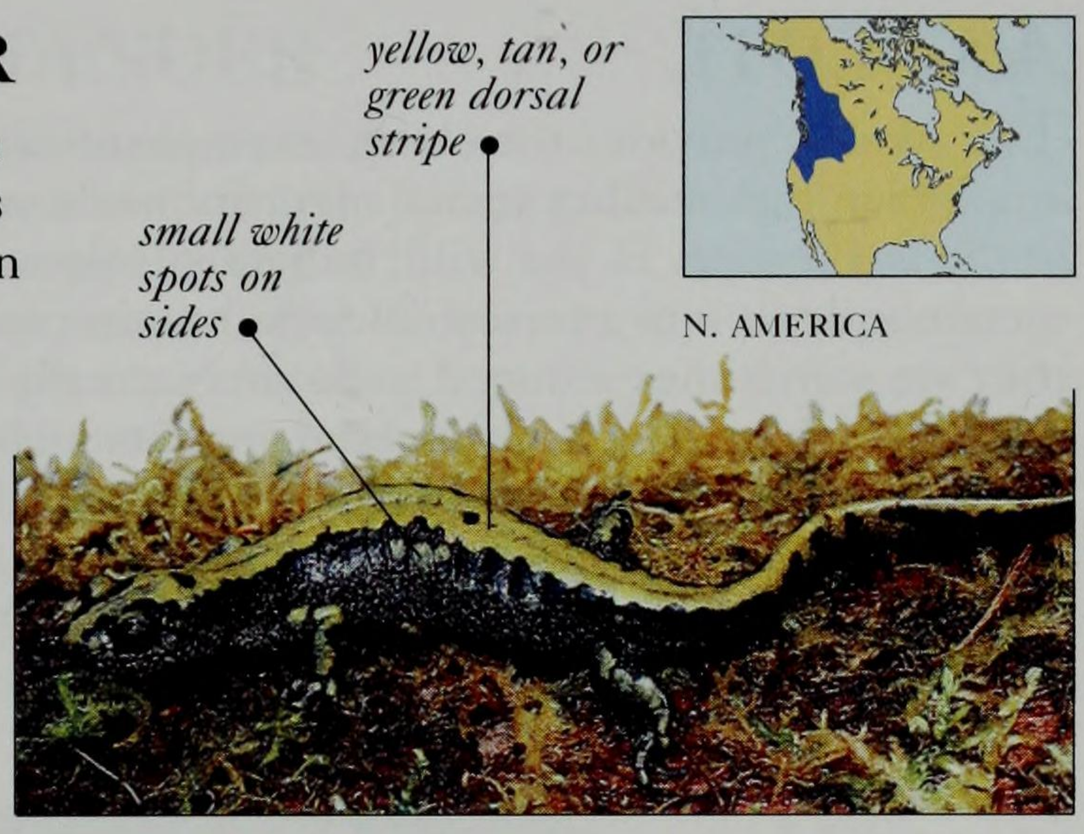
LONG-TOED SALAMANDER

This small salamander is dark gray to black with a yellow, tan, or green stripe or blotches down its back. It lives mainly underground but migrates in large numbers to ephemeral ponds, lakes, and streams to breed. Eggs are laid singly or in clusters attached to plants.

• **OCCURRENCE** N.E. US and Canada. In forest, meadows, and sagebrush (*Artemisia*).

• **REPRODUCTION** Lays eggs in water in spring.

• **REMARK** The Californian subspecies *Ambystoma macrodactylum croceum* is endangered.



N. AMERICA

Length 4–6¾in (10–17cm)	Habit Mostly terrestrial	Activity ☾

Family AMBYSTOMATIDAE	Species *Ambystoma maculatum*	Status Locally common

SPOTTED SALAMANDER

This small-limbed animal lives below ground by day, emerging on wet nights to feed and, in early spring, to migrate to its ephemeral breeding ponds. Females lay eggs attached to twigs. The larvae metamorphose rapidly, within two to four months.

• **OCCURRENCE** E. North America. In forest.

• **REPRODUCTION** Lays eggs in water in spring.

• **REMARK** Individuals always return to the same pond to breed.





N. AMERICA

Length 6–10in (15–25cm)	Habit Mostly terrestrial	Activity ☾

Family AMBYSTOMATIDAE	Species *Ambystoma tigrinum*	Status Locally common

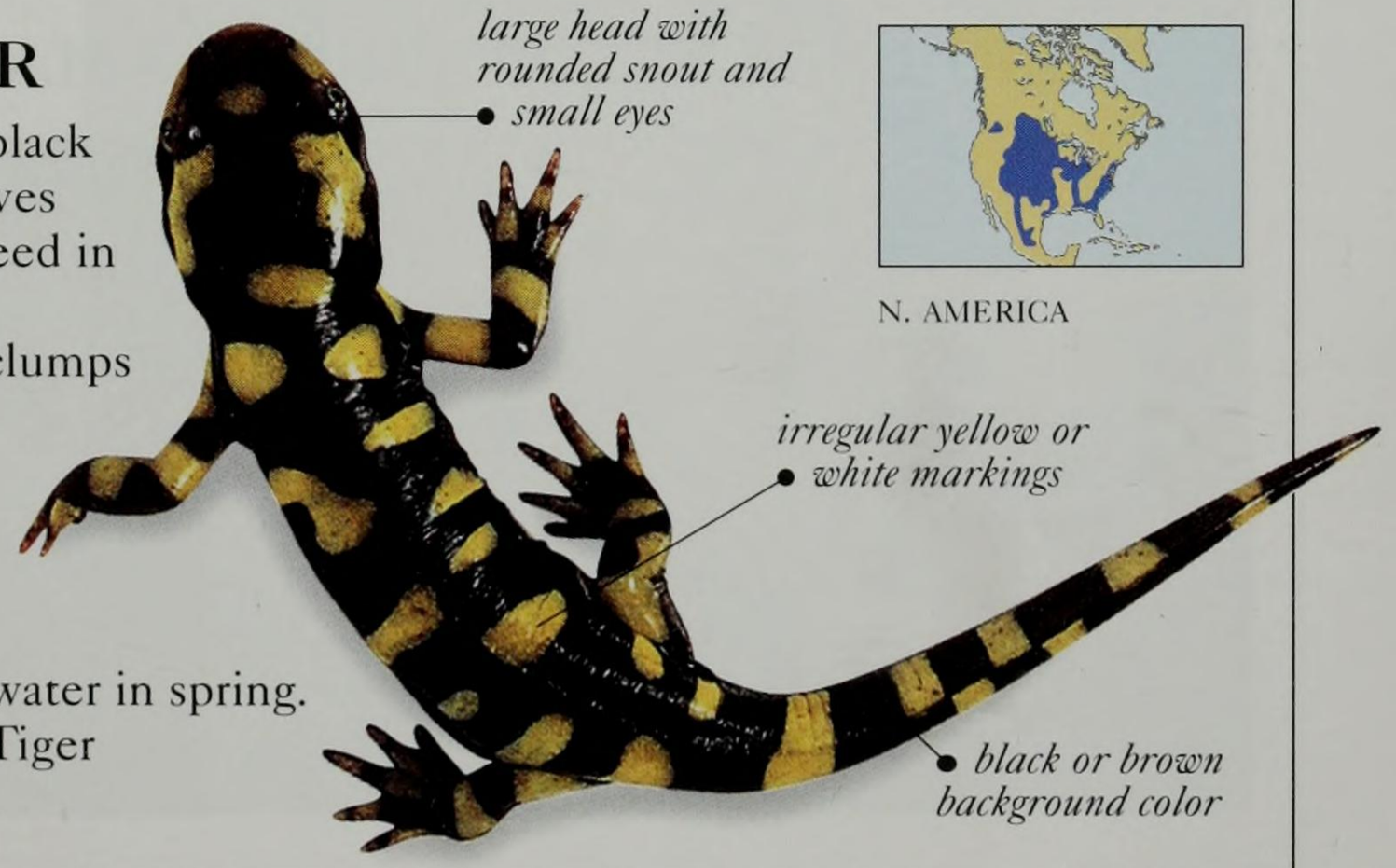
TIGER SALAMANDER

This variable salamander is usually black or brown, with lighter markings. It lives mainly underground, emerging to breed in still water. Males transfer sperm in a spermatophore, and eggs are laid in clumps on weeds and twigs. Larvae may remain in water over winter.

• **OCCURRENCE** North America. In desert, grassland, forest, open woodland, fields, and meadows.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Californian Tiger Salamander (*Ambystoma californiense*).



N. AMERICA

Length 7–10in (18–25cm)	Habit Mostly terrestrial	Activity ☾

Family AMBYSTOMATIDAE	Species *Ambystoma mexicanum*	Status Endangered

AXOLOTL

The Axolotl provides the classic example of an amphibian that reaches sexual maturity while still in the larval state. In the wild, individuals do not metamorphose into a terrestrial form but, in captivity, they are sometimes induced to do so. Naturally dark gray or black in color, captive-bred variants include animals that are albino or yellow, or white with large blotches of gray or black. Males transfer sperm in a spermatophore. Eggs are laid on the bottom of the lake.

• **OCCURRENCE** Lake Xochimilco, Mexico.

• **REPRODUCTION** Lays eggs in water in autumn and spring.

• **REMARK** Once eaten as a delicacy in Mexico City, the Axolotl is now a protected species.



N. AMERICA

rounded head with small eyes

large, feathery gills

ALBINO VARIANT

coloration usually black or dark gray in the wild

WILD TYPE



Length 4–8in (10–20cm)	Habit Entirely aquatic	Activity ◯

Family PLETHODONTIDAE	Species *Batrachoceps attenuatus*	Status Locally common

CALIFORNIA SLENDER SALAMANDER

This slender-bodied, tiny-limbed salamander lives mostly below ground and under logs and rocks, emerging only at night and after rain. Several females may lay their eggs in the same cavity. The eggs hatch directly into small adults, without an aquatic larval stage.

• **OCCURRENCE** California and Oregon, US. In grassland, chaparral, pine forest, and woodland.



N. AMERICA

• **REPRODUCTION** Lays eggs underground in autumn.

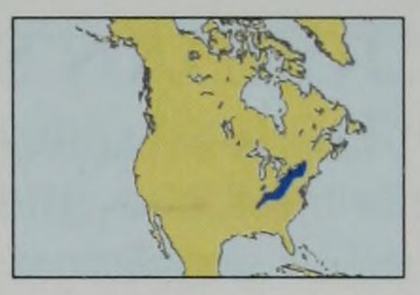
tail may drop off if caught



Length 3–5½in (7.5–14cm)	Habit Entirely terrestrial	Activity ☾

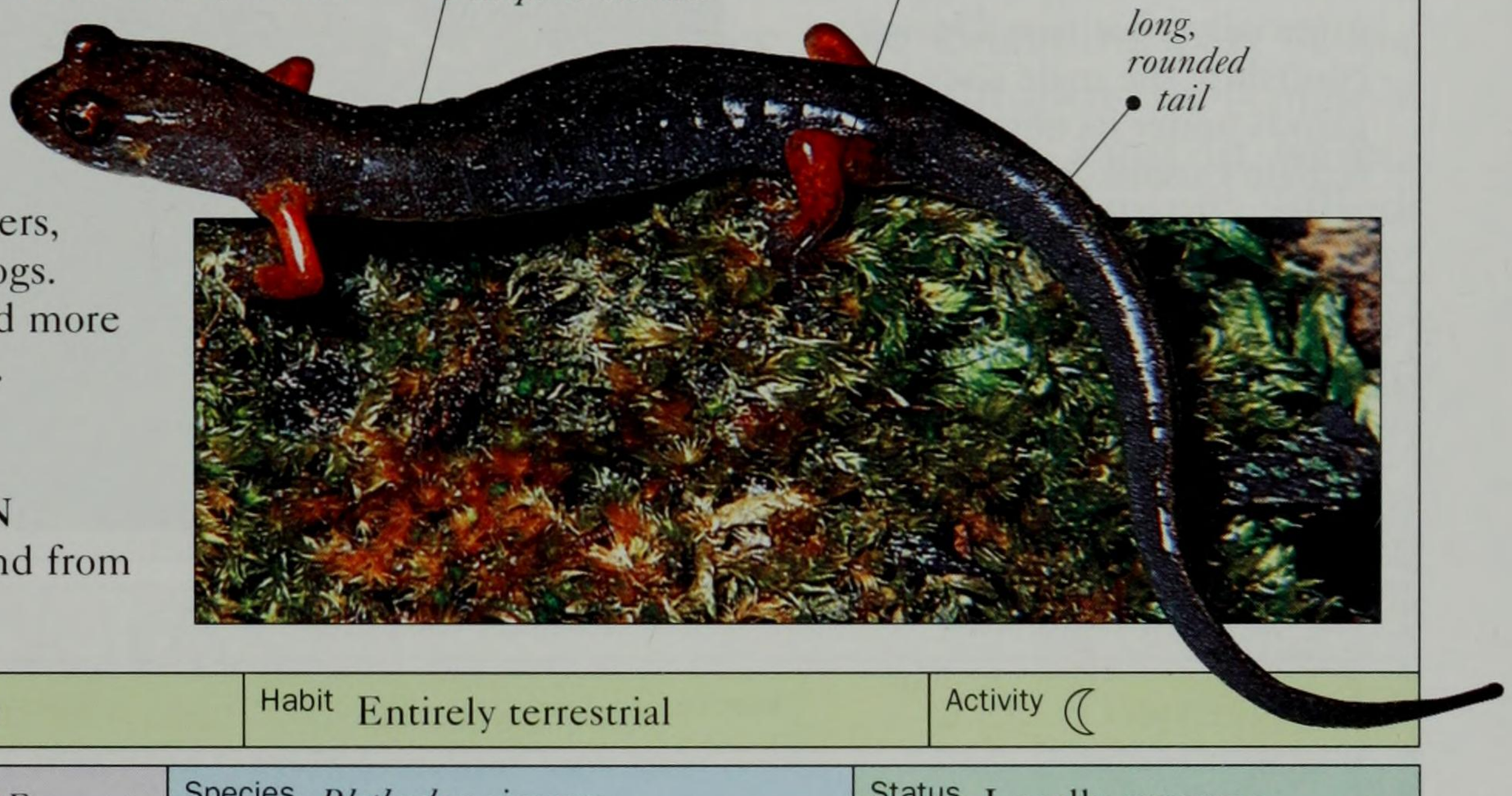
Family PLETHODONTIDAE	Species *Desmognathus ochrophaeus*	Status Common

MOUNTAIN DUSKY SALAMANDER



N. AMERICA

The Mountain Dusky Salamander is very abundant in some localities, but is rarely seen. It has highly variable coloration and patterning. Most individuals are dark gray, with a stripe or row of large patches down the back, which may be yellow, orange, olive-green, gray, tan, brown, or reddish brown. The sides are generally pale gray or ocher. Adults live mostly underground, emerging only at night, and the larvae live in streams. Breeding males have two small teeth, with which they abrade the skin of females, and a gland under the chin that produces an aphrodisiac secretion, which they rub into the skin. Mating occurs on land, then the eggs are deposited underground, in clusters, attached to rocks or logs. Individuals may breed more than once in a season.



• OCCURRENCE
E. US. In forest.
• REPRODUCTION
Lays eggs underground from spring to autumn.

Length 2¾–4¼in (7–11cm)	Habit Entirely terrestrial	Activity ☾

Family PLETHODONTIDAE	Species *Plethodon cinereus*	Status Locally common

RED-BACKED SALAMANDER



N. AMERICA

This slender salamander has a narrow body, short, slender limbs, and a round tail forming half of its total body length. The common name derives from the broad red, black-edged stripe that runs along the length of its body and much of its tail. In many individuals, however, the stripe may be orange, yellow, or gray. An inhabitant of leaf-litter, the Red-backed Salamander eats ants and termites. Males leave droppings around their territories, and females examine these intently, usually mating with those males that have eaten a lot of termites. During courtship, the male scrapes the female's skin with two protruding teeth. Females lay only 6 to 13 large eggs, attached to the roof of an underground chamber.



• OCCURRENCE E. and C. US and S.E. Canada. In forest.
• REPRODUCTION Lays eggs underground from autumn to spring.

Length 2¾–4¾in (7–12cm)	Habit Entirely terrestrial	Activity ☾

Family PLETHODONTIDAE	Species *Plethodon jordani*	Status Locally common

JORDAN'S SALAMANDER



N. AMERICA

This is a relatively large salamander, with a long, slender, gray to black body and a long, narrow head with very prominent eyes. Some populations are uniform in color, while others have bright red cheeks or legs. When attacked, Jordan's Salamander produces a distasteful slimy secretion from its tail. The tail itself may become detached to distract the predator while the salamander escapes. This species hides under logs by day and is active only at night, especially after rain. During courtship, the male uses large glands under its chin to tap the female's snout. Males breed every year, whereas females breed in alternate years.

• OCCURRENCE
S. Appalachian mountains, E. US. In montane forest.

• REPRODUCTION Lays eggs in summer and autumn.



Length 3½–7¼in (9–18.5cm)	Habit Entirely terrestrial	Activity ☾

Family PLETHODONTIDAE	Species *Pseudotriton ruber*	Status Locally common

RED SALAMANDER



N. AMERICA

With its stout body and its short tail and legs, this species is less agile than other salamanders but nonetheless sometimes preys on them. Its head is relatively small with distinctive yellow eyes. Its bright red coloration, with irregular black spots, tends to get darker in older individuals. The coloration is believed to mimic that of the highly poisonous juvenile stage of the Red-spotted Newt (*Notophthalmus viridescens*). When attacked, the Red Salamander raises and waves its tail.

• OCCURRENCE E. US. Under logs and stones near springs and clear streams.

• REPRODUCTION Lays eggs in autumn on land or in water.

• REMARK This species may not lay its eggs until several months after mating.



Length 4–6¾in (10–17cm)	Habit Mostly terrestrial	Activity ☾

CAECILIANS

FREQUENTLY mistaken for large earthworms, caecilians have long bodies, no limbs, and virtually no tail. Many have distinct grooves that form rings around the body. Some species have long, thin bodies, while others are shorter and stockier. Caecilians have pointed, heavily boned heads, which help them to burrow into the soil. Their primary sense is smell, and their eyes are very rudimentary.

There are five families of caecilians in the order Gymnophiona (also known as the Apoda), comprising approximately 165 species. Most caecilians are found in loose soil or deep leaf-litter in tropical forest, but some live in rivers and streams. All are carnivorous, feeding on a variety of prey including earthworms, termites, and other invertebrates. They are "sit and wait" predators rather than hunters, lunging at prey when it comes close and holding onto it with a double row of teeth in the upper jaw, and a single or double row in the lower jaw.

In all caecilian species, fertilization is internal, the male extruding part of his cloaca to insert sperm into the female's body. Some species lay eggs in water, which hatch into swimming, gilled larvae; others lay their eggs in soil, where they hatch into miniature adults. Several species retain the eggs in their body and give birth to live young.

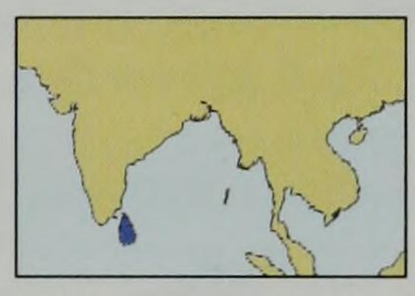
Family ICHTHYOPHIDAE	Species *Ichthyophis glutinosus*	Status Locally common

CEYLON CAECILIAN

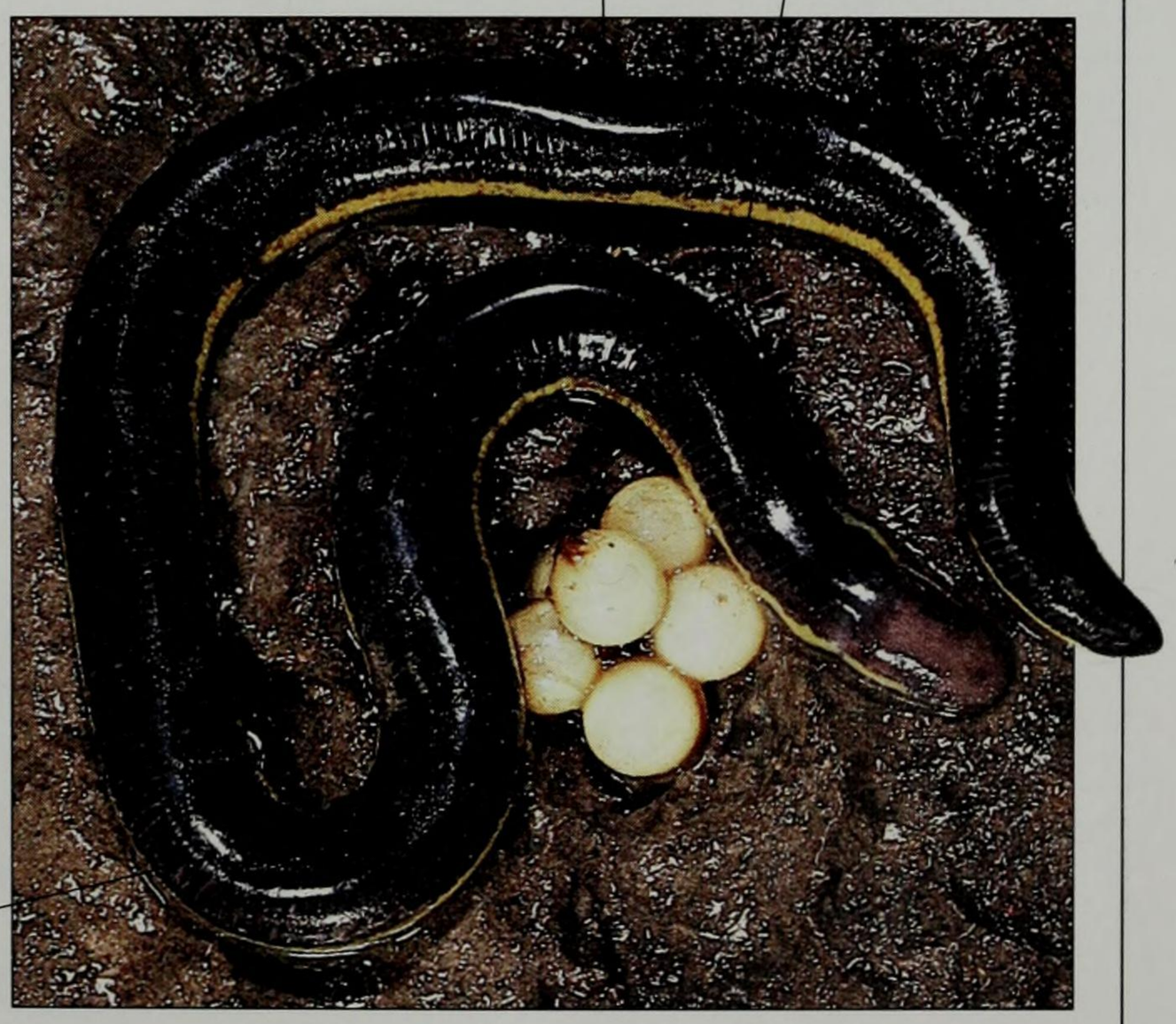
The numerous rings (approximately 400) around the dark brown, cylindrical body make the Ceylon Caecilian look like a very large earthworm. The underside is a paler brown, and a distinctive yellow stripe extends along each side from the head to the tail. The head is oval and relatively small. A small, retractable tentacle between the eye and the nostril picks up chemical cues in the environment, enhancing the animal's sense of smell. The eyes, which are covered by a layer of skin, are minute and barely visible. The tail is extremely short. The Ceylon Caecilian lives mostly below ground, emerging to the surface only very occasionally. It feeds mainly on earthworms and other invertebrates. The female lays up to 54 eggs in a burrow close to water and guards them until they hatch. The aquatic larvae immediately swim to a nearby pond or stream.

• OCCURRENCE Sri Lanka. In muddy soil and swamps.

• REPRODUCTION Lays eggs on land in the rainy season.



SRI LANKA



Length 12–16in (30–40cm)	Habit Entirely terrestrial	Activity ◯

Family CAECILIIDAE	Species *Dermophis mexicanus*	Status Locally common

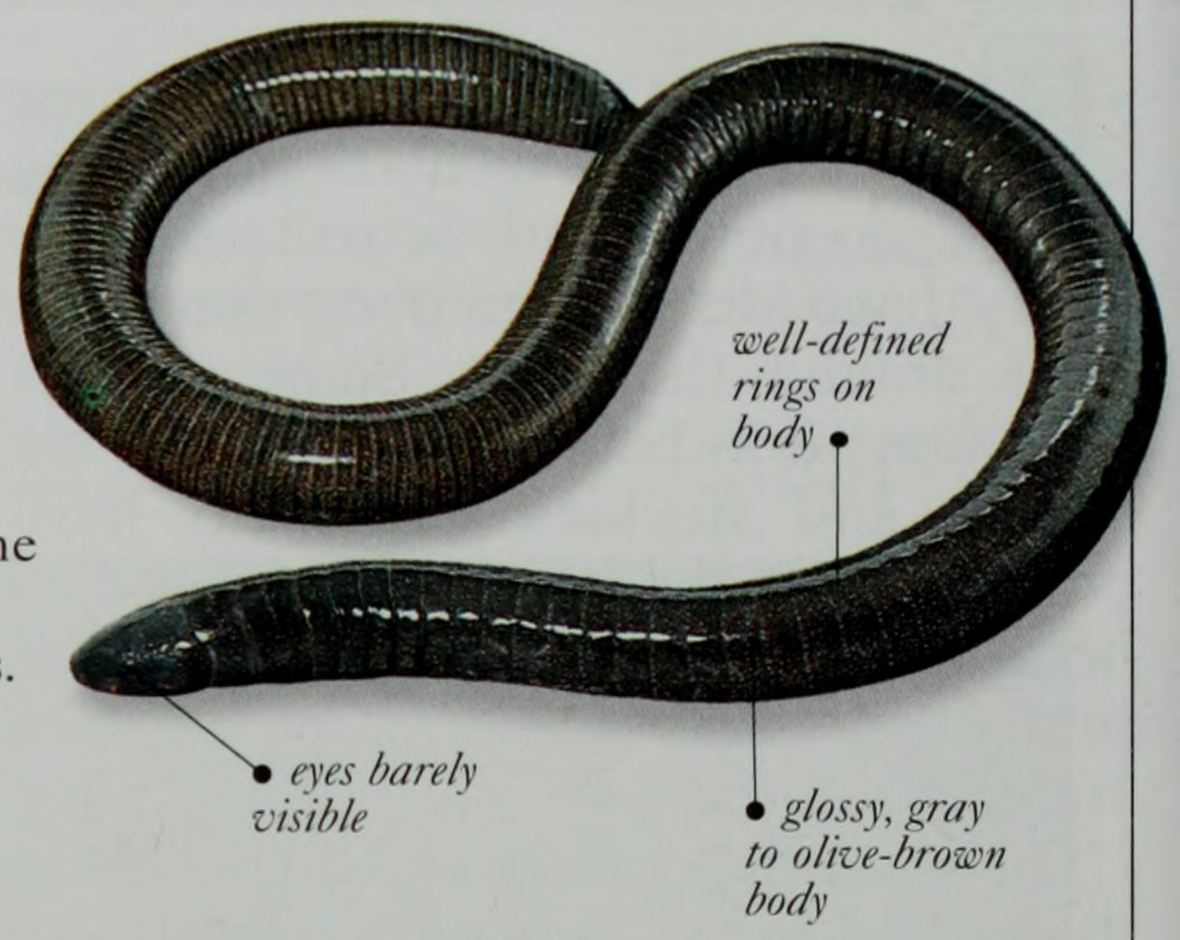
MEXICAN CAECILIAN

The Mexican Caecilian has glossy, gray to olive-brown skin and well-defined rings along its long, cylindrical body. The tail is very short. This relatively large species occasionally eats small lizards in addition to its usual diet of invertebrates. It has been reported to make a clicking sound, the reason for which is unknown. The egg and larval stages are completed inside the body of the female, which gives birth to miniature adults.



N., C., & S. AMERICA

• OCCURRENCE Mexico to N. Colombia. In soil.
• REPRODUCTION Live-bearing.



Length 4–24in (10–60cm)	Habit Entirely terrestrial	Activity ◯

Family CAECILIIDAE	Species *Siphonops annulatus*	Status Locally common

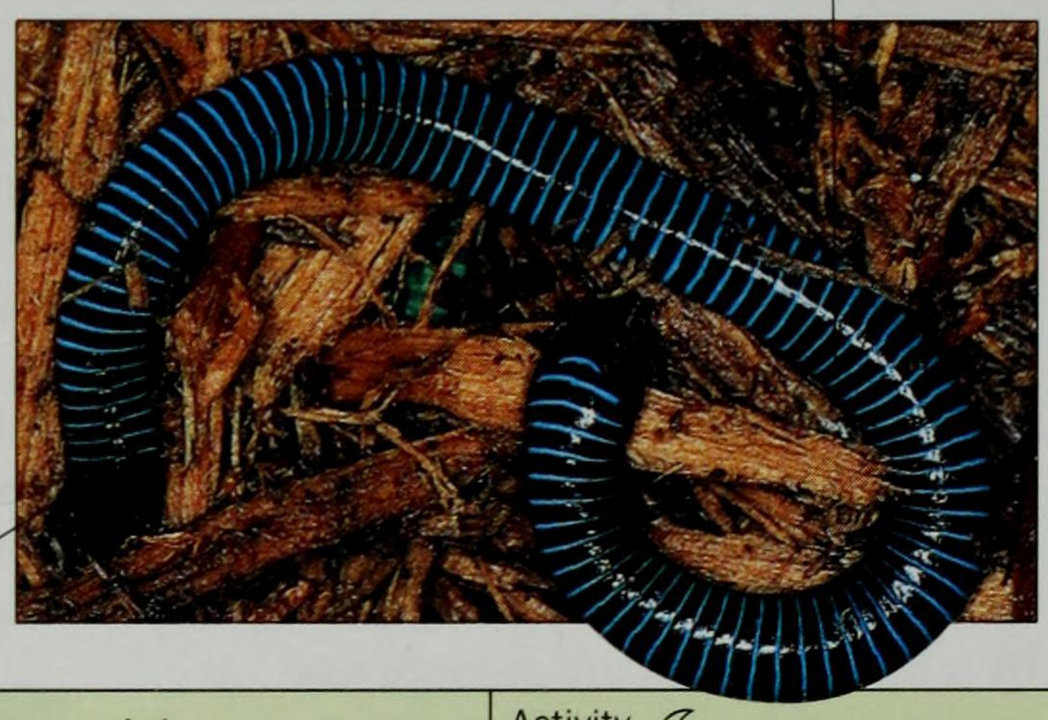
SOUTH AMERICAN CAECILIAN

This relatively short caecilian is dark blue with white rings. It is reported to produce a clicking sound and feeds mostly on earthworms. The skin produces a toxic secretion to deter predators.

• OCCURRENCE East of the Andes from Colombia to Argentina. In forest soil.
• REPRODUCTION Lays eggs on land (season unknown).



S. AMERICA



Length 8–16in (20–40cm)	Habit Entirely terrestrial	Activity ☾

Family TYPHLONECTIDAE	Species *Typhlonectes compressicaudus*	Status Locally common

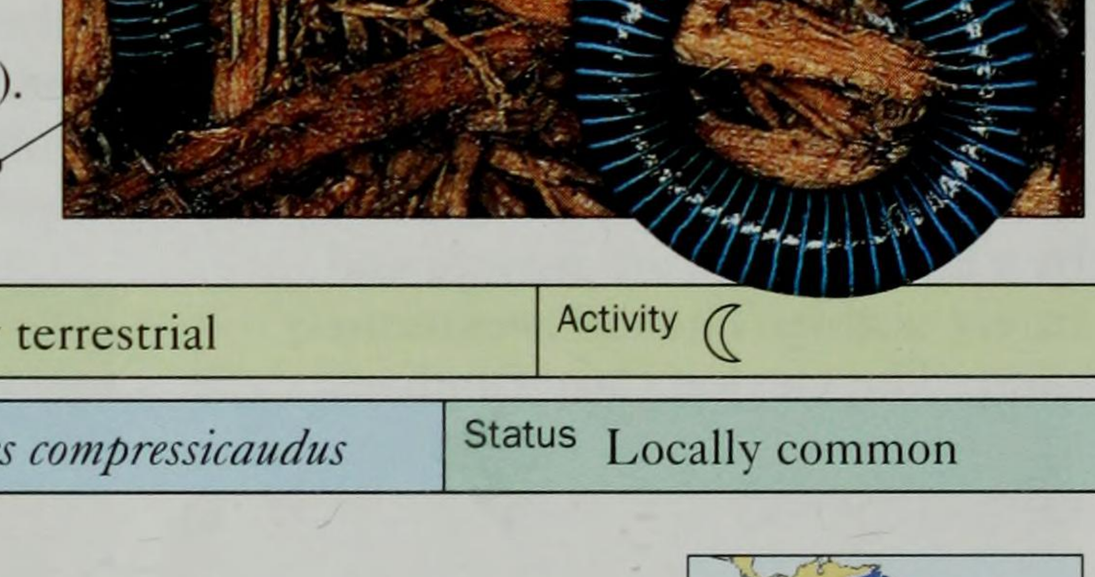
CAYENNE CAECILIAN

The long, slender Cayenne Caecilian is glossy black above and dark gray below, with 80 to 95 rings along its cylindrical body. The body is laterally compressed toward the rear to form a tail with a slight dorsal fin. It is entirely aquatic and, when swimming, it resembles an eel. The skin produces a toxic secretion that protects it from predatory fishes. The eggs are retained inside the female's body.

• OCCURRENCE Guyana and Brazil. In rivers, lakes, and streams.
• REPRODUCTION Live-bearing.



S. AMERICA



Length 12–24in (30–60cm)	Habit Entirely aquatic	Activity ☾

FROGS AND TOADS

THERE ARE more than 4,100 species of frogs and toads, making the order Anura much the largest group of amphibians. The majority live in the tropics, mostly in or close to freshwater.

Frogs and toads are characterized by the absence of a tail in the adult. Most have hindlimbs that are much larger than the forelimbs, enabling them to jump, sometimes very long distances. Many species are beautifully colored. This coloration may serve either as camouflage or as a warning to potential predators that their skin produces toxic secretions. Not all of the attractively colored species are poisonous, but certain species produce some of the most deadly poisons in nature.

There is much diversity among frogs and toads. In terms of movement alone, there are species that (in addition to jumping and crawling) use their legs to swim, burrow into the soil, climb trees, and glide through the air. The primary senses of frogs and toads are vision (for which they have very large eyes) and hearing. Many frogs and toads use loud calls to communicate with one another, especially during breeding. In the mating season, species may congregate in large numbers in or around freshwater.

Frogs and toads typically lay their eggs in water. The eggs hatch into larvae (known as "tadpoles"), which have spherical bodies and are herbivorous. Adult frogs and toads, however, are carnivorous, feeding mostly on insects. They are generally active only at night.

The term "toad" strictly refers to the approximately 250 species in the genus *Bufo*, but it is widely used for any slow-moving anuran with rough, warty skin.

Family ASCAPHIDAE	Species *Ascaphus truei*	Status Locally common

TAILED FROG

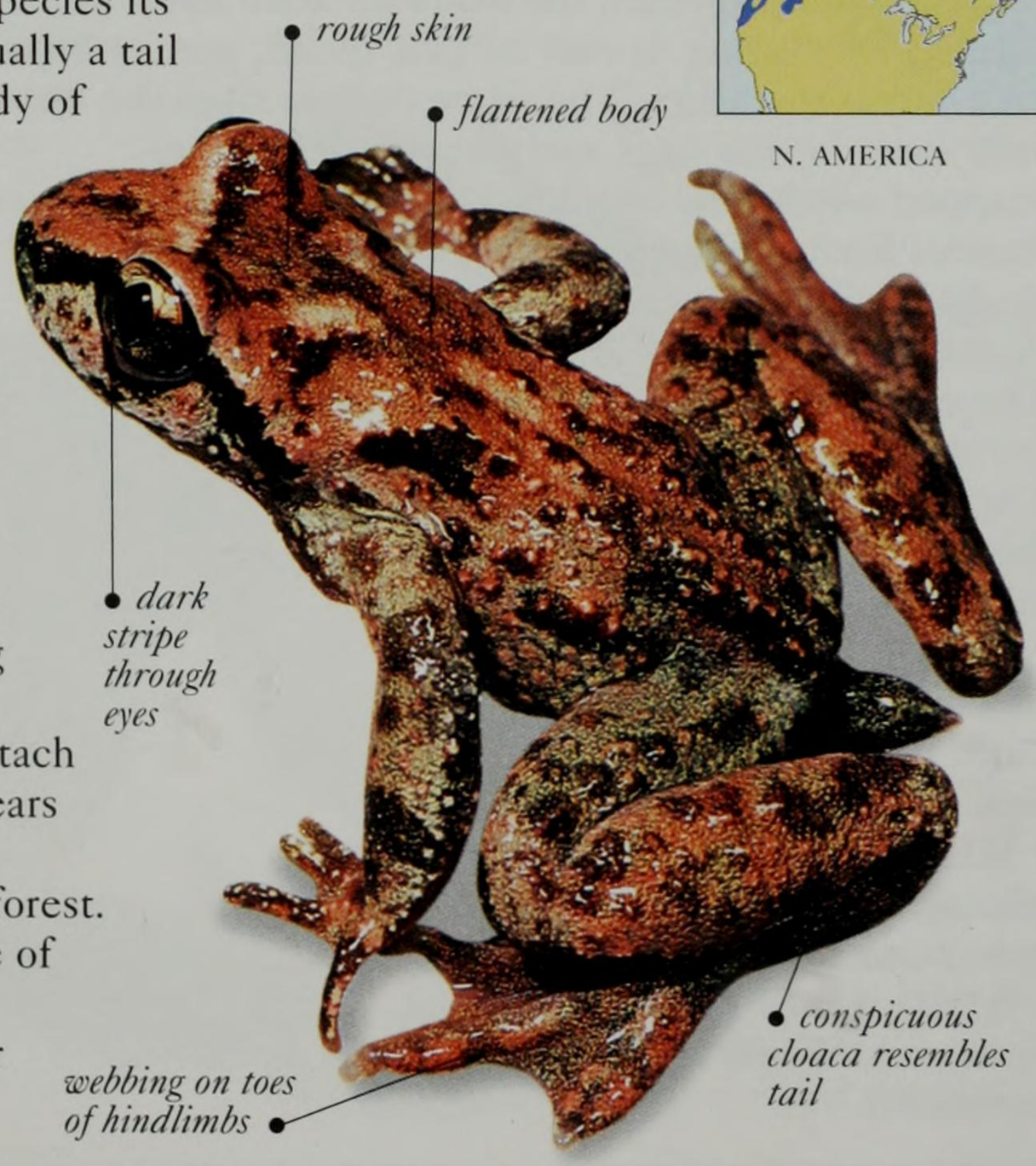
A unique tail-like appendage gives this species its name. Present only in males, it is not actually a tail but is an extension of the cloaca. The body of the Tailed Frog is slightly flattened, and the rough skin is olive-green, brown, gray, or reddish brown. There is a dark stripe through the eye and usually a yellow or pale green triangular patch on the head. The male develops dark, rough pads on the forearms and chest in the breeding season. Fertilization is internal, the male inserting sperm into the female using his tail-like cloaca. The female lays eggs in strings under rocks in fast-moving streams. The tadpoles, which have large, suckerlike mouths that enable them to attach to rocks in fast-flowing water, take two years to complete their development.

• **OCCURRENCE** N.W. US. In humid forest. Also in grassland and scrub, to an altitude of 6,500ft (2,000m).

• **REPRODUCTION** Lays eggs in water in summer.



N. AMERICA



Length 1–2in (2.5–5cm)	Habit Mostly terrestrial	Activity ☾

Family DISCOGLOSSIDAE	Species *Alytes muletensis*	Status Endangered

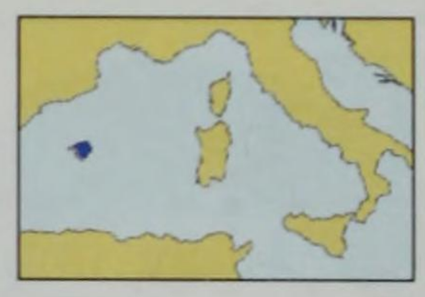
MAJORCAN MIDWIFE TOAD

Smaller than its mainland relatives, this tiny toad is able to live in very narrow and deep crevices. It is usually yellow to brown, with distinctive dark mottling. Both males and females call to locate each other. Females produce several small clutches of eggs in a year. During mating, the female passes a batch of eggs to the male, which carries them wrapped around the hindlegs. When the eggs are ready to hatch, they are deposited in a pool. The tadpoles grow very large, and little growth occurs after metamorphosis into the adult form.

• OCCURRENCE Majorca, Spain. In high-altitude ravines.

• REPRODUCTION Male releases eggs into water from spring to autumn.

• REMARK One of the world's rarest frogs, it has been the subject of a successful conservation program, in which captive-bred animals are released into new localities on Majorca.



MAJORCA



Length 1¼–1¾in (3–4.5cm)	Habit Mostly terrestrial	Activity ☾

Family DISCOGLOSSIDAE	Species *Alytes obstetricans*	Status Locally common

MIDWIFE TOAD

A small, plump species, the Midwife Toad has powerful forelimbs adapted for digging. It may be pale green, gray, or brown, often with darker markings. The name derives from the fact that the male cares for the eggs, carrying them in strings wrapped around the hindlegs. Males call to females from a crevice or burrow, producing a distinctive high-pitched "poo...poo" sound. The eggs are transferred from female to male during mating. The male carries them until they are ready to hatch and then releases them into shallow water.

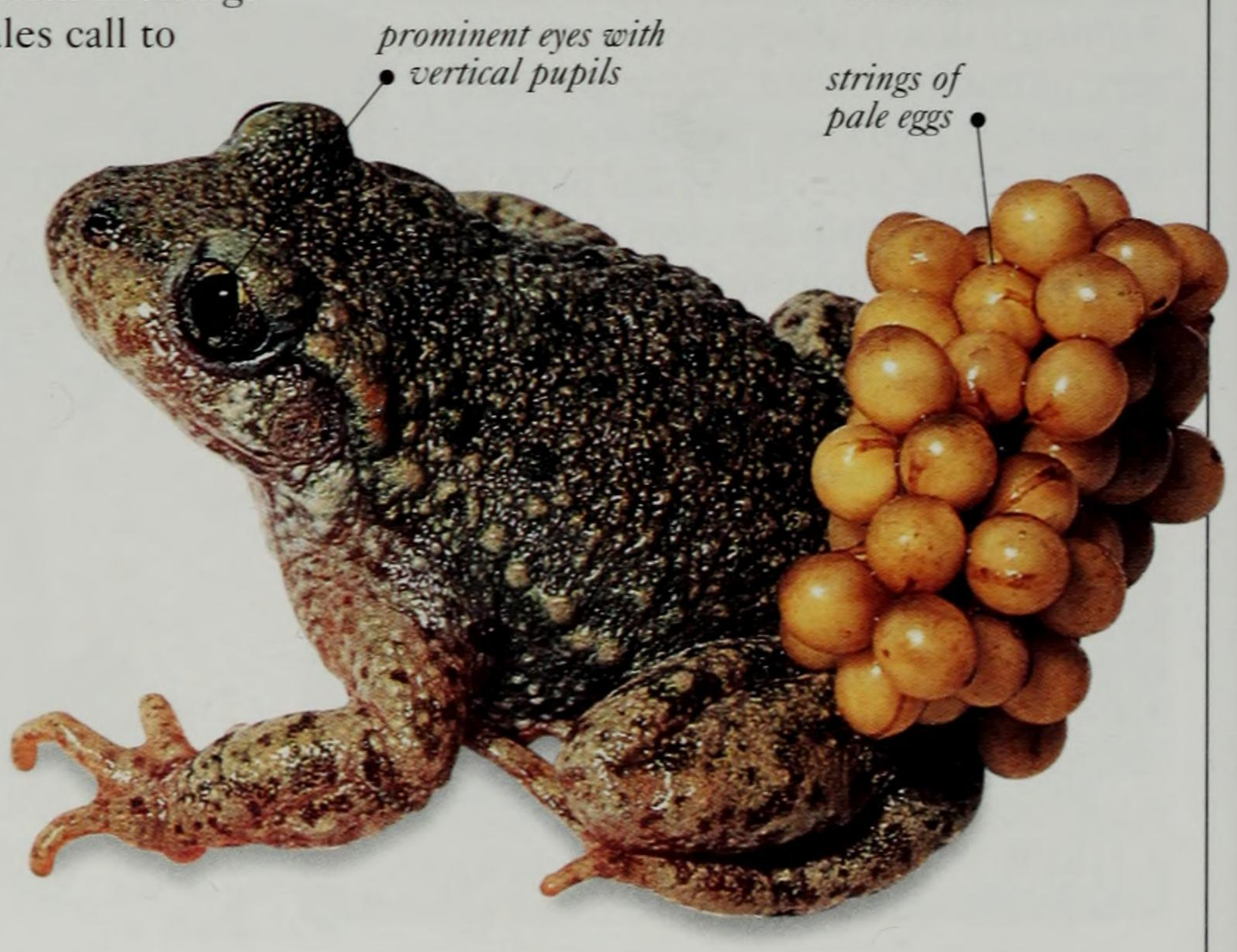
• OCCURRENCE W. Europe. In woodland, gardens, drystone walls, quarries, sand dunes, and rock slides.

• REPRODUCTION Male releases eggs into water in spring and summer.

• SIMILAR SPECIES Spanish Midwife Toad (*Alytes cisternasii*).



EUROPE



Length 1¼–2in (3–5cm)	Habit Entirely terrestrial	Activity ☾

Family DISCOGLOSSIDAE	Species *Bombina orientalis*	Status Locally common

ORIENTAL FIRE-BELLIED TOAD



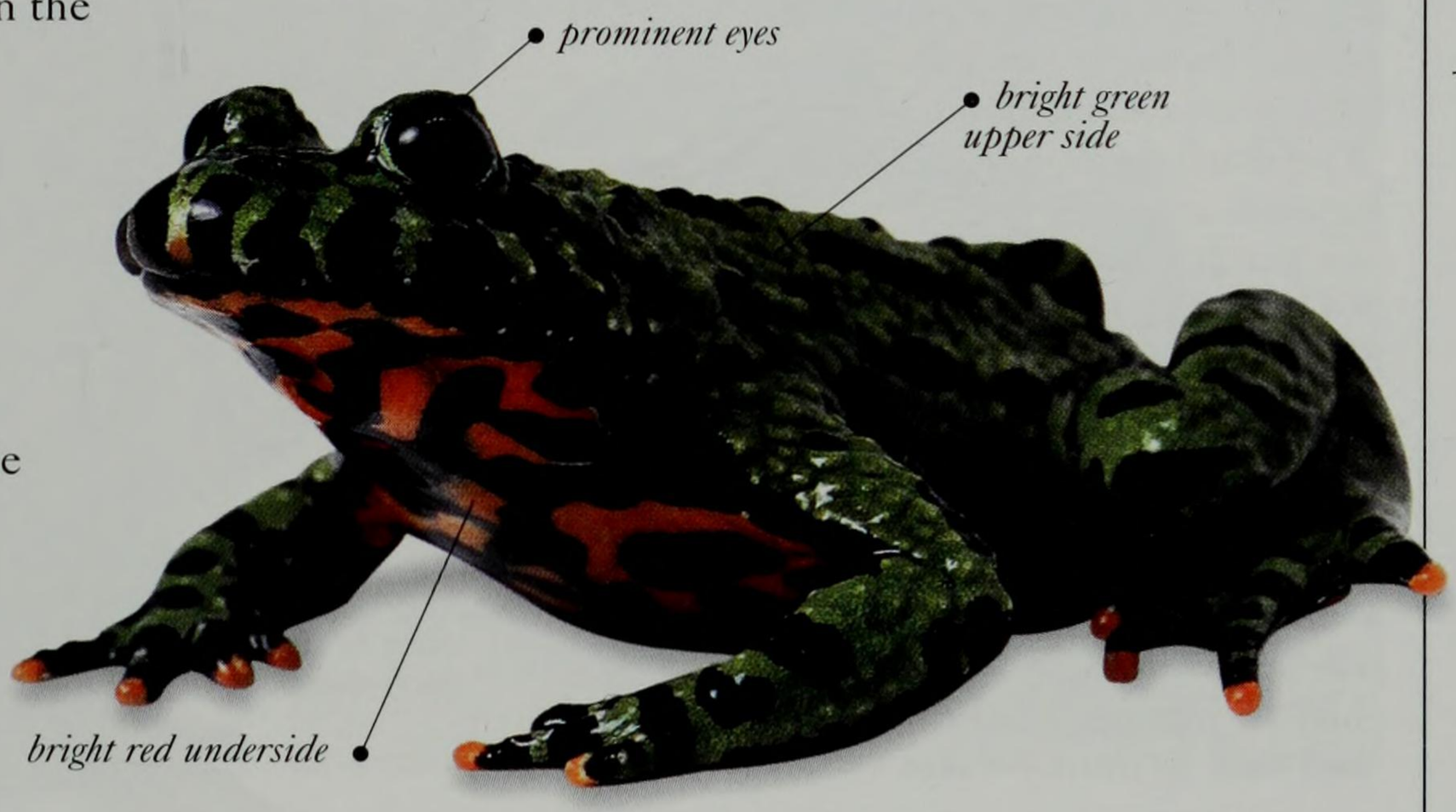
ASIA

The Oriental Fire-bellied Toad is brightly colored green or brown above, with black mottling on its back. Its most distinctive feature, however, is the bright vermilion underside (also mottled with black), which is revealed when it is attacked. It also produces a toxic secretion. The female produces relatively few (two to eight) large eggs, which are laid under rocks in streams. During the long breeding season, males develop dark, rough patches on the forearms that enable them to maintain a secure grip on the females during mating.

• **OCCURRENCE**
N.E. China and Korea. In mountain streams in coastal regions.

• **REPRODUCTION**
Lays eggs in water in spring and summer.

• **REMARK** Very simple to keep and breed in captivity, the Oriental Fire-bellied Toad is extremely popular among terrarium keepers.



Length 1¼–2in (3–5cm)	Habit Mostly aquatic	Activity ◯

Family DISCOGLOSSIDAE	Species *Bombina variegata*	Status Common

YELLOW-BELLIED TOAD

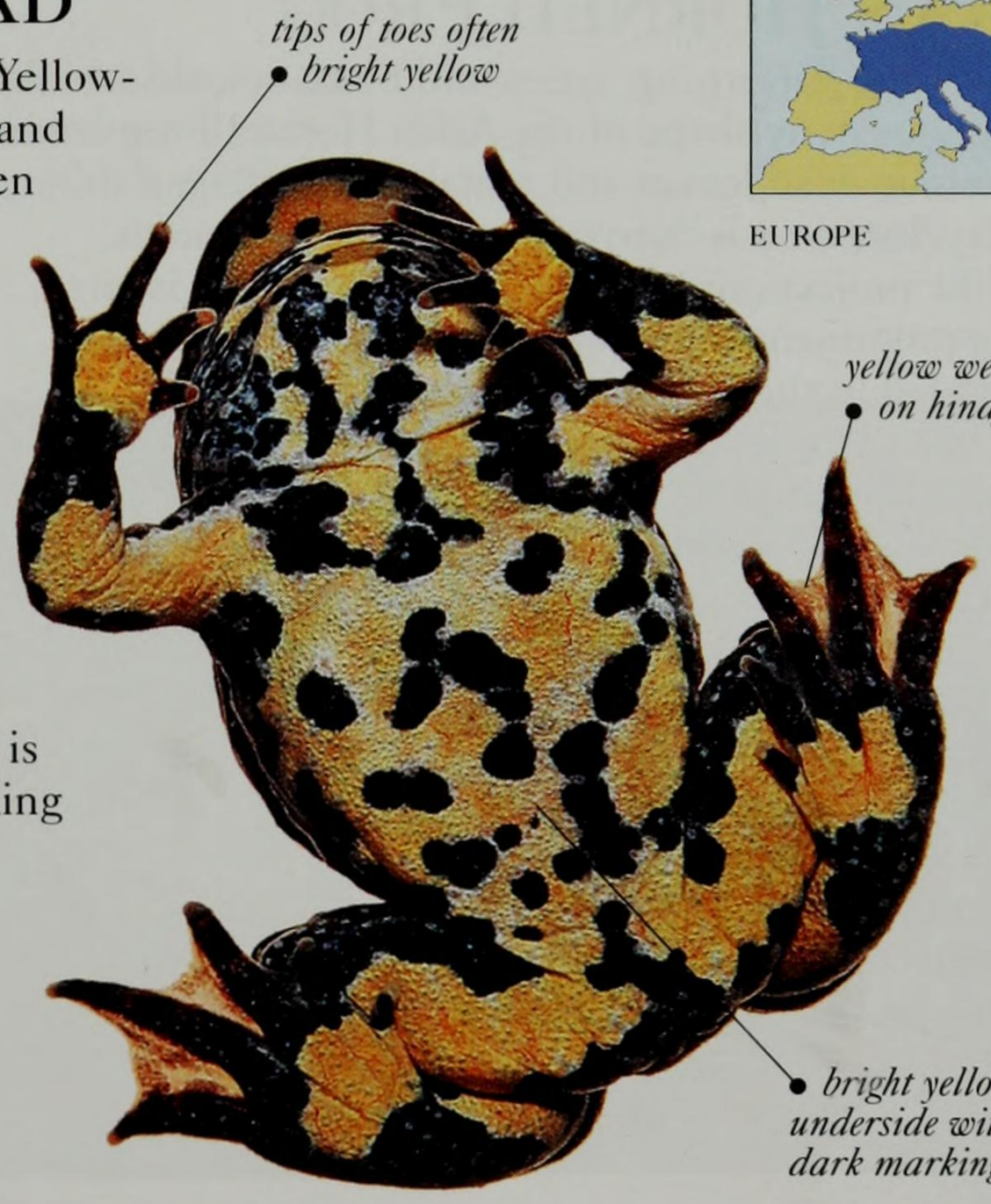


EUROPE

Found in almost any body of water, the Yellow-bellied Toad has a small, flattened body and warty skin. It is gray, brown, or olive-green above, with a yellow (or sometimes orange) underside. A highly sociable species, groups of males form choruses and call to females. This toad produces toxic secretions, and an attack triggers a curious "unken reflex" which it shares with other *Bombina* species: lying on its belly, it lifts all four limbs up over its back to reveal the bright warning coloration on its underside. Its webbed hindfeet make it a good swimmer, and it is often seen floating in open water or basking in the sun at the edge of a pool.

• **OCCURRENCE** C. and S. Europe. In rivers, streams, ponds, pools, marshes, puddles, and wheel-ruts in lowland and hilly areas.

• **REPRODUCTION** Lays eggs in water in spring and summer.



Length 1½–2in (4–5cm)	Habit Mostly aquatic	Activity ◯

Family PIPIDAE	Species *Xenopus laevis*	Status Common

AFRICAN CLAWED TOAD



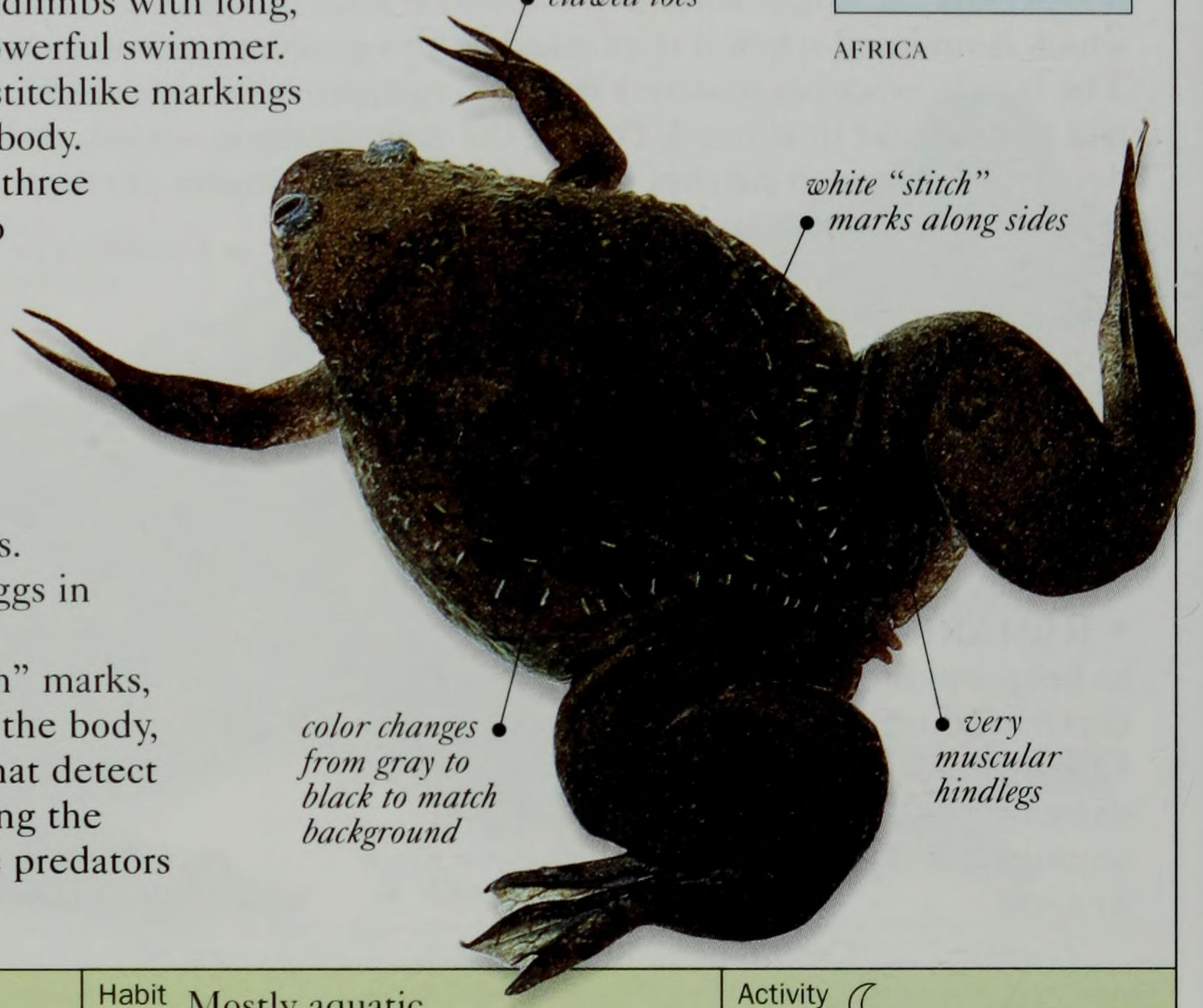
AFRICA

Also known as the Platanna, this species is highly adapted for aquatic life. It has a flattened, streamlined body and strong, muscular hindlimbs with long, webbed toes that make it a powerful swimmer. There are characteristic white stitchlike markings running along each side of the body. The forelimbs are small, with three clawed toes, which are used to shovel food into the mouth of this voracious feeder. The small eyes point upward, enabling it to see predators such as herons.

• **OCCURRENCE** Angola, S.E. Africa. In ponds and lakes.

• **REPRODUCTION** Lays eggs in water in the rainy season.

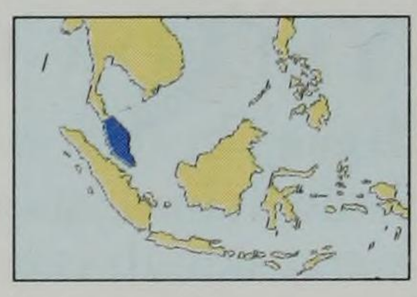
• **REMARK** The white "stitch" marks, which run along either side of the body, contain special sense organs that detect vibrations in the water, enabling the African Clawed Toad to locate predators and food in murky water.



Length 2½–5in (6–13cm)	Habit Mostly aquatic	Activity ☾

Family PELOBATIDAE	Species *Megophrys nasuta*	Status Locally common

ASIAN HORNED FROG



ASIA

The cryptic patterning, green and black coloration, and amorphous body shape of the Asian Horned Frog enable it to mimic dead leaves and remain camouflaged during the day. Its name is derived from the conspicuous, hornlike projections on the eyelids. The head is large, with a prominent snout, and there is a bony shield embedded in the skin on its back. The Asian Horned Frog is a "sit and wait" predator that feeds on smaller frogs and invertebrates. The tadpoles, which hang vertically in the water to feed, have large, umbrella-shaped mouths that act as a funnel to suck in tiny organisms.

• **OCCURRENCE** S.E. Asia. In tropical forest.

• **REPRODUCTION** Lays eggs in water in the rainy season.



Length 2¾–5½in (7–14cm)	Habit Mostly terrestrial	Activity ☾

Family PELOBATIDAE	Species *Pelobates fuscus*	Status Locally common

COMMON SPADEFOOT TOAD



EUROPE, ASIA

A pale, horny lump on the hindfeet of the Common Spadefoot Toad enables it to burrow backward into the soil (hence its name). Other features of this species include a plump body, relatively smooth skin, and a distinctive lump on top of its head. Coloration and patterning are highly variable, ranging from creamy white to gray or brown. This toad is most active in wet weather and often gives off an odor resembling garlic. When attacked, it squeals, inflates its body, and raises itself on all fours. When breeding, the male calls to the female from below water.

• **OCCURRENCE** Europe and E. Asia. In sand dunes, heathland, and cultivated areas.

• **REPRODUCTION** Lays eggs in water in spring.



Length 1½–3¼in (4–8cm)	Habit Mostly terrestrial	Activity ☾

Family PELOBATIDAE	Species *Scaphiopus couchii*	Status Locally common

COUCH'S SPADEFOOT



N. AMERICA

This toad's name is derived from the spadelike black ridge on its hindfeet, which it uses to scrape away the soil as it digs into the ground. It has a plump body, which is covered in small, pale tubercles. Coloration is green, yellow-green, or brown, with black, brown, or dark green markings, and a uniformly off-white underside. This species spends most of its life in a cocoon underground, having burrowed into soft soil. It breeds in ephemeral pools in semiarid habitats. The eggs hatch extremely quickly, about three or four days after they are laid, and the larvae grow rapidly so that they become adults before the temporary pools dry up.

• **OCCURRENCE** S. US and Mexico. In grassy plains, bush desert, and thorn forest.

• **REPRODUCTION** Lays eggs in water in summer.



Length 2¼–3½in (5.5–9cm)	Habit Mostly terrestrial	Activity ☾

Family PELOBATIDAE	Species *Pelodytes punctatus*	Status Locally common

PARSLEY FROG

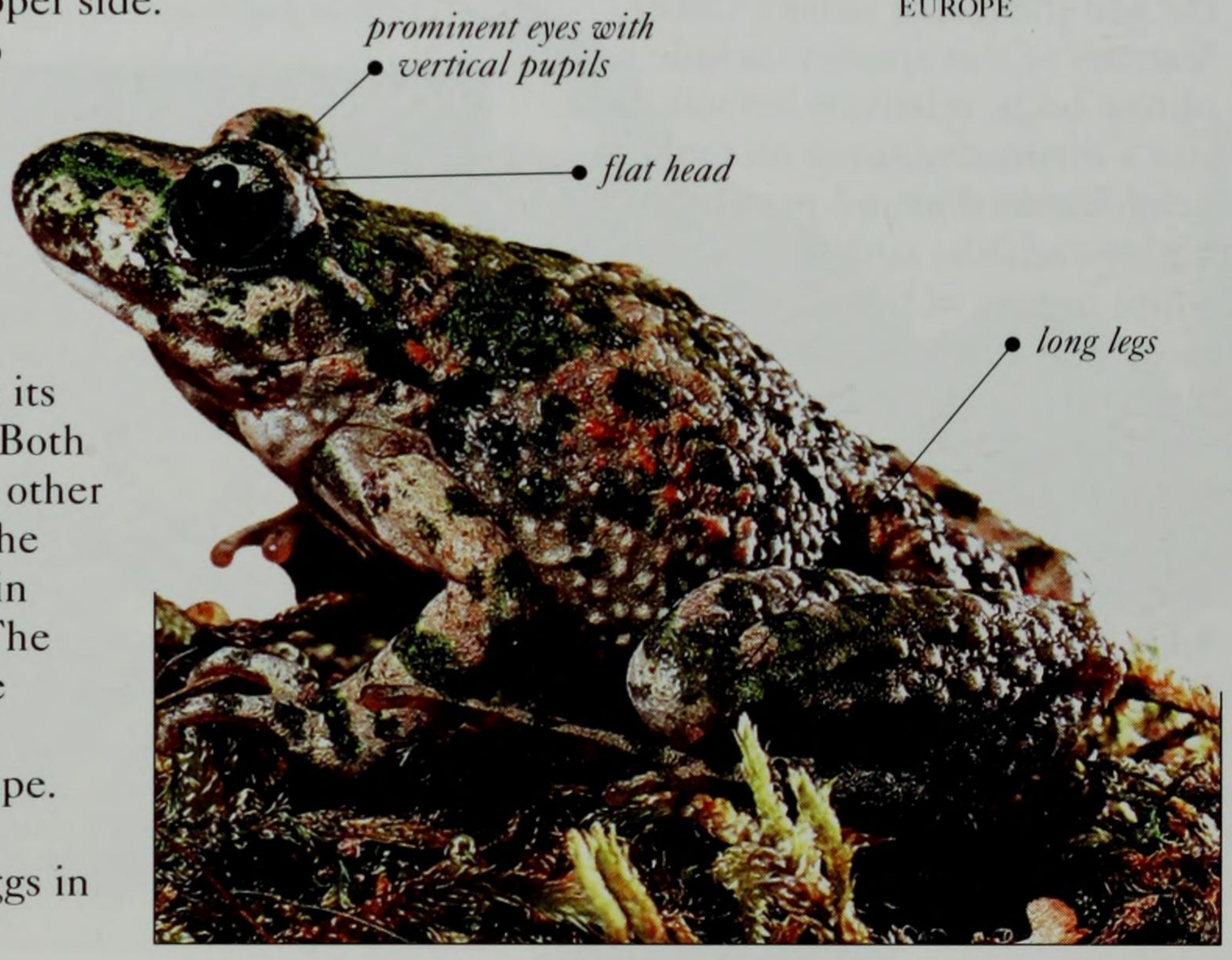
The name of this agile, long-limbed frog is derived from the bright green flecks on its skin that resemble chopped parsley. It is generally pale gray to light green, often with an X-shaped marking on its upper side. The Parsley Frog burrows into the soil during the day, but it is also a very good swimmer, jumper, and climber, despite the fact that its toes lack both webbing and adhesive pads. When climbing smooth surfaces, the Parsley Frog uses its underside as a kind of sucker. Both males and females call to each other during the breeding season. The female lays the eggs in ponds in broad strips after heavy rain. The tadpoles sometimes grow to be longer than the adults.

• **OCCURRENCE** S.W. Europe. In damp, vegetated habitats.

• **REPRODUCTION** Lays eggs in water in spring.



EUROPE



Length 1¼–2in (3–5cm)	Habit Mostly terrestrial	Activity ☾

Family MYOBATRACHIDAE	Species *Crinia insignifera*	Status Locally common

SIGN-BEARING FROGLET

The Sign-bearing Froglet has a minute, slim body with relatively long, slender limbs. Its coloration is variable, ranging from gray to brown, with darker spots and stripes. Its common name refers to a dark triangular patch that is often present between the eyes. The toes are long and lack webbing. The Sign-bearing Froglet may be smooth-skinned, or it may have warts or folds of skin on its back. It breeds in coastal swamps. The eggs may be laid singly or in clumps.

• **OCCURRENCE** S.W. Australia. In a wide variety of swampy habitats.

• **REPRODUCTION** Lays eggs in water in winter.



AUSTRALIA



Length ⅝–1¼in (1.5–3cm)	Habit Mostly terrestrial	Activity ☾

Family MYOBATRACHIDAE	Species *Limnodynastes peronii*	Status Locally common

BROWN-STRIPED FROG



This frog has longitudinal dark and light brown stripes, sometimes tinged with pink; most individuals have a pale vertebral stripe. There are dark blotches on the sides and the underside is white. To survive drought, the Brown-striped Frog buries itself underground. Males produce a loud, clicklike call. The eggs, which are deposited in a floating foam nest, hatch quickly, and tadpoles develop rapidly.



AUSTRALIA

• **OCCURRENCE** E. Australia. In a wide variety of swampy habitats.

• **REPRODUCTION** Lays eggs in water in spring and summer.

Length 1¼–2½in (3–6cm)	Habit Mostly terrestrial	Activity ☾

Family MYOBATRACHIDAE	Species *Neobatrachus pictus*	Status Locally common

PAINTED BURROWING FROG



With its squat, plump body and short limbs, this frog is adapted for burrowing. It digs its way into the soil backward, using a hard, spadelike tubercle on its hindfeet. The toes of its hindfeet are webbed. The Painted Burrowing Frog is gray or yellow in color, with dark brown or green mottled markings; there may be a pale stripe down the middle of the back. Males produce a trill-like call.



AUSTRALIA

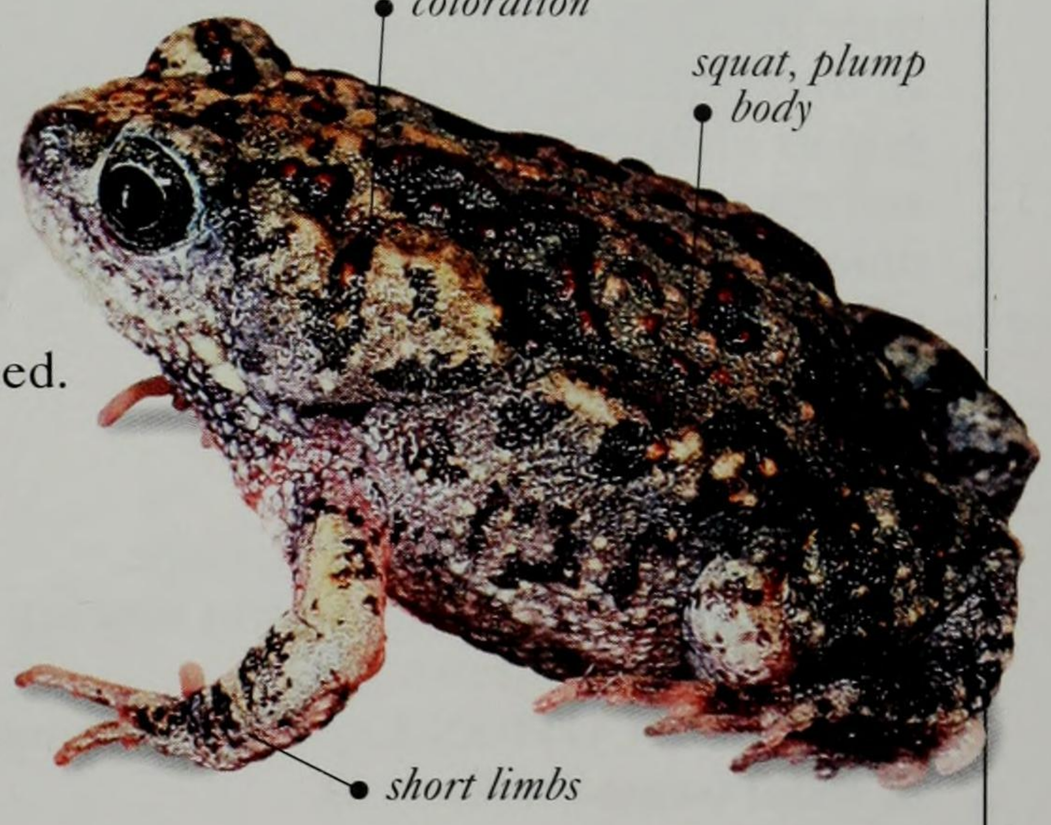
• **OCCURRENCE** S. Australia. In woodland, scrub, grassland, and farmland.

• **REPRODUCTION** Lays eggs in water in autumn and winter.

Length 1¾–2½in (4.5–6cm)	Habit Mostly terrestrial	Activity ☾

Family MYOBATRACHIDAE	Species *Uperoleia lithomoda*	Status Locally common

STONEMASON TOADLET



A tiny, squat frog with short limbs, this species is covered in prominent, wartlike glands. It is dull brown or gray, with a gold line, or line of patches, along the sides of the body. A burrowing species, its hindfeet are equipped with a horny tubercle that enables them to dig into the soil. The toes are unwebbed.

• **OCCURRENCE** N. Australia. In open grassland.



AUSTRALIA

• **REPRODUCTION** Lays eggs in water in winter.

• **REMARK** The Stonemason Toadlet is named after its call, which sounds like two stones being hit against each other.

Length ⅝–1¼in (1.5–3cm)	Habit Mostly terrestrial	Activity ☾

Family SOOGLOSSIDAE	Species *Sooglossus gardineri*	Status Endangered

SEYCHELLES FROG

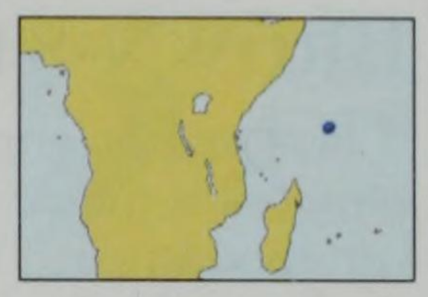
A very small terrestrial species, the Seychelles Frog varies in color from creamy white or yellowish green to brown. It has relatively big, protruding eyes with horizontal pupils, and its toes lack adhesive disks or webbing. The large, yolky eggs do not hatch into tadpoles but into tiny froglets that have only rudimentary eyes. The male sits in the egg mass and the froglets crawl onto his back, where they become glued on by mucus. They remain attached to the male until they have used up their yolk and their legs are fully developed.

• **OCCURRENCE** Seychelles, Indian Ocean. In woodland and forest.

• **REPRODUCTION** Lays eggs on land in the rainy season.

• **SIMILAR SPECIES** Seychelles Frog (*Sooglossus seychellensis*).

• **REMARK** Populations have declined owing to habitat destruction.



SEYCHELLES



Length ⅜–⅝in (1–1.5cm)	Habit Entirely terrestrial	Activity ☾

Family HELEOPHRYNIDAE	Species *Heleophryne purcelli*	Status Locally common

CAPE GHOST FROG

An inhabitant of fast-flowing streams, the Cape Ghost Frog is perfectly adapted for aquatic life. Long, powerful hindlimbs with webbed toes make it a good swimmer; a flattened body enables it to hide by squeezing between boulders; and flattened tips to its toes give it a secure grip on slippery surfaces. Its smooth skin is yellow, brown, or green, mottled with dark red or brown. In the breeding season, the male develops numerous tiny spines all over its body, which enable it to grip its mate. Males call to females, and mating is preceded by a unique form of behavior in which partners rub each other with their forelimbs. Tadpoles have suckerlike mouths to attach themselves to rocks.

• **OCCURRENCE** S. and W. Cape, S. Africa. In fast-flowing streams running through boulder-strewn gorges.

• **REPRODUCTION** Lays eggs in or just out of water (season unknown).



AFRICA



Length 1¼–2½in (3–6cm)	Habit Mostly aquatic	Activity ☾

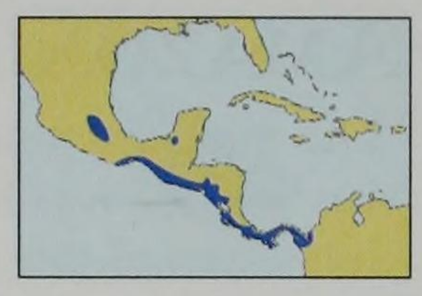
Family LEPTODACTYLIDAE	Species *Physalaemus pustulosus*	Status Common

TÚNGARA FROG

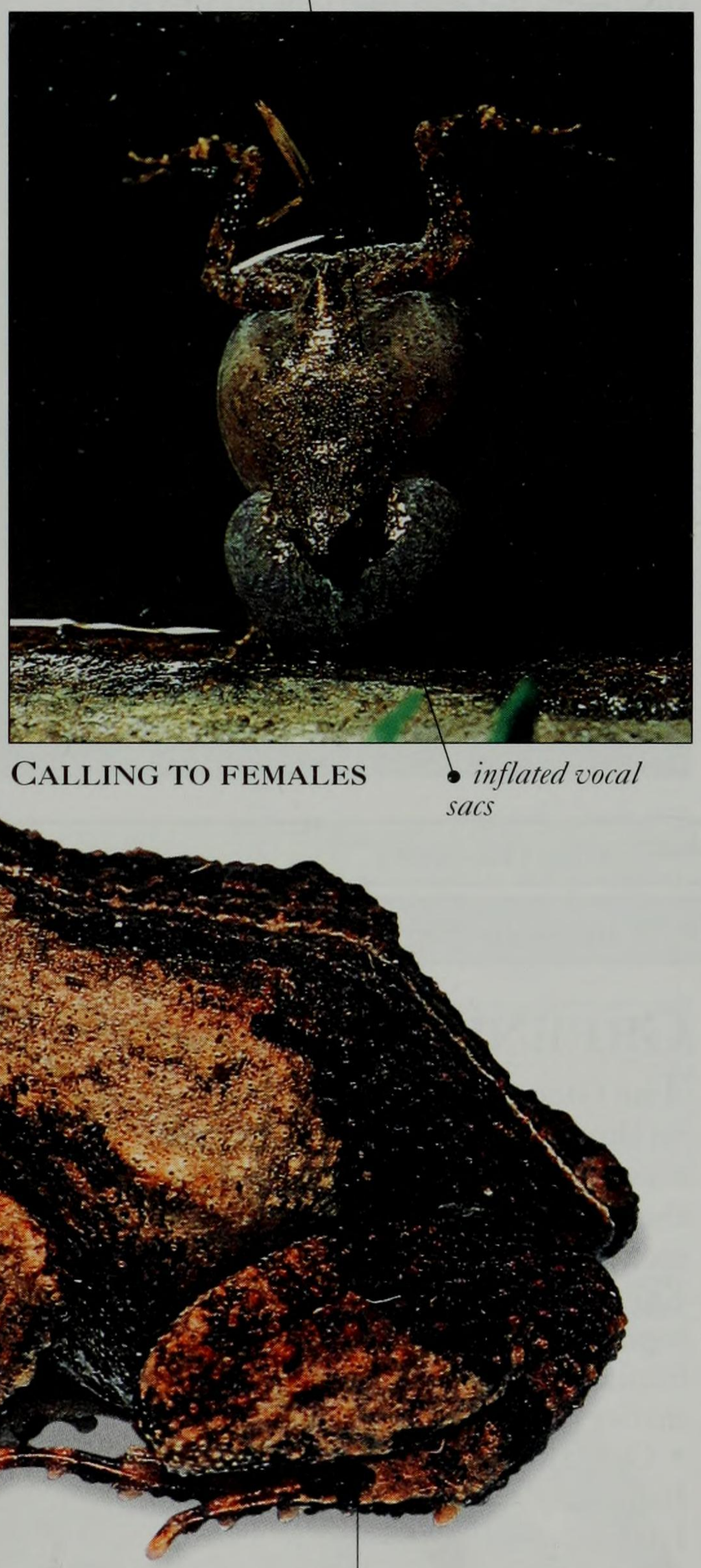
This small, toadlike frog is dark brown with warty skin. It is rarely seen outside the breeding season. Following the first rains of the year, male Túngara Frogs appear in any pool of water, from large ponds to wheel-ruts, from where they call to females. The call is very loud, as the male repeatedly inflates its huge vocal sacs. The call is variable, consisting of a basic "whine," which is followed by one or several "chucks." However, the call may also attract the attention of predatory bats that swoop over Túngara Frog choruses, eating frogs whole. During mating, the female produces a secretion that the male whips into a floating foam nest with its hindlimbs. After heavy rain, the eggs are laid in the nest. The eggs hatch quickly and tadpole development is very rapid.

• **OCCURRENCE** Central America. In a wide variety of habitats, from scrub to forest; also found in gardens and other urban habitats.

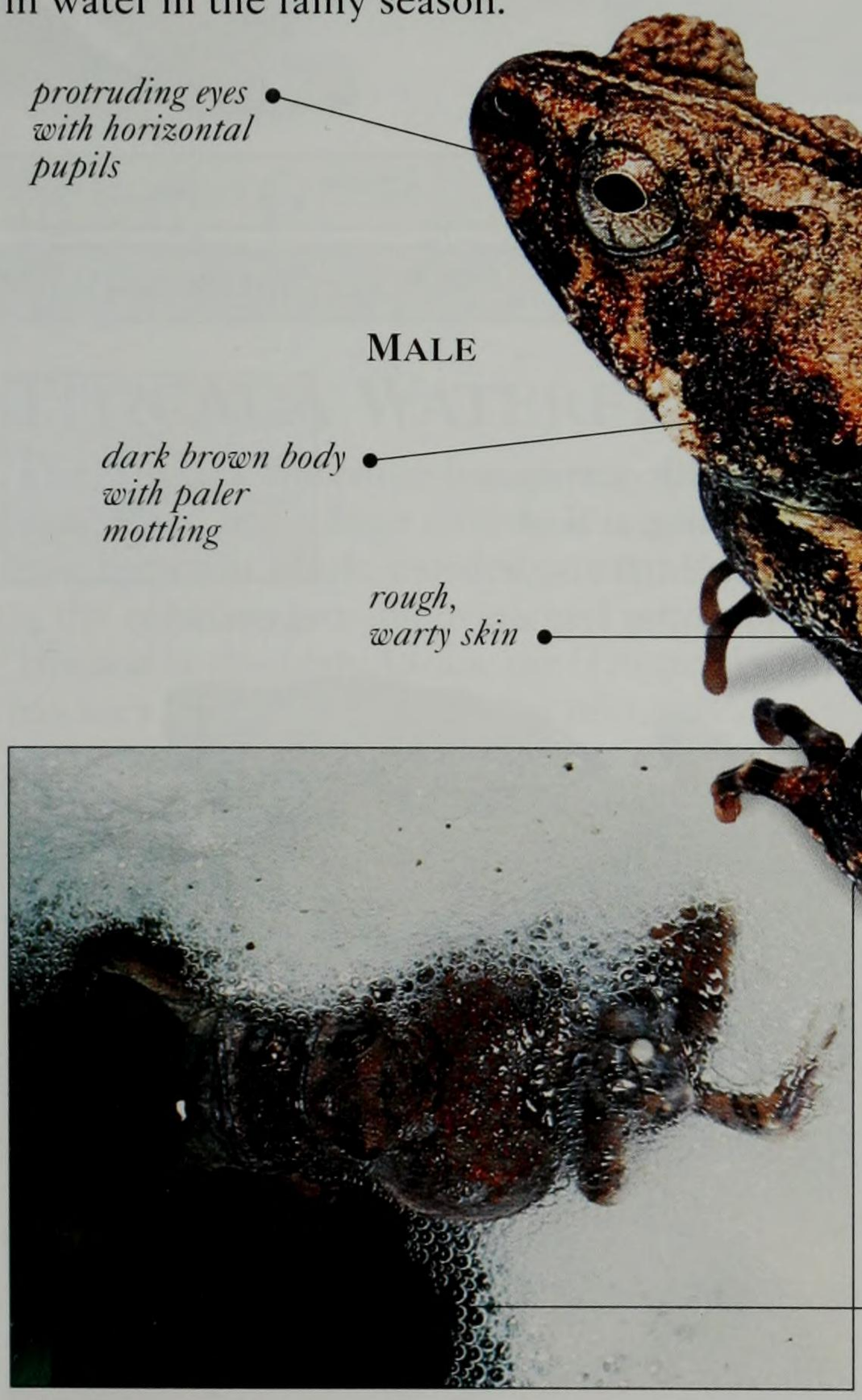
• **REPRODUCTION** Lays eggs in water in the rainy season.



C. AMERICA

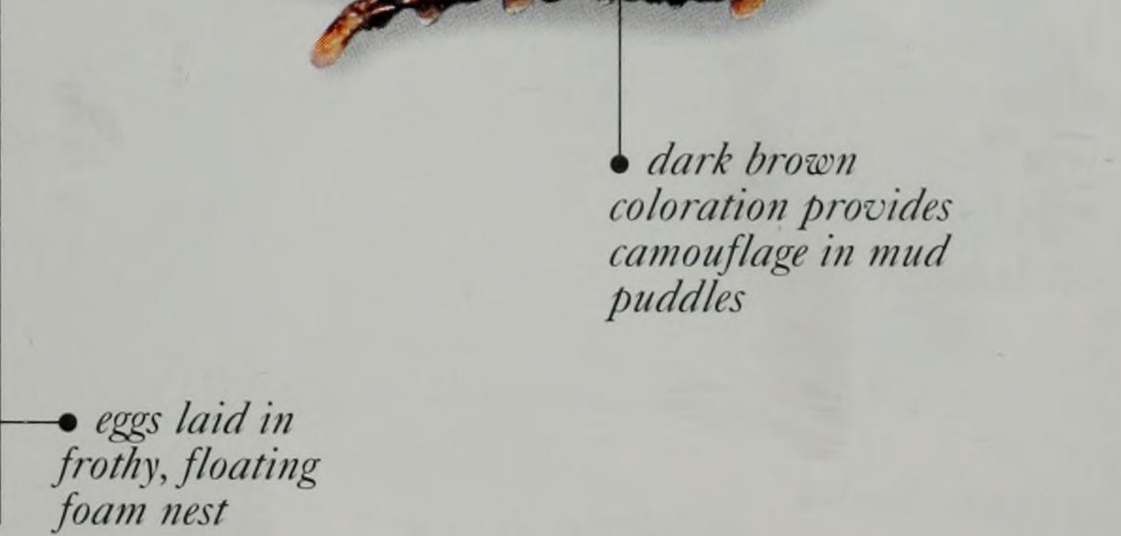


CALLING TO FEMALES



MALE

PAIR SPAWNING IN A FOAM NEST



Length 1¼–1½in (3–4cm)	Habit Mostly terrestrial	Activity ☾

Family LEPTODACTYLIDAE	Species *Ceratophrys cornuta*	Status Locally common

AMAZONIAN HORNED FROG

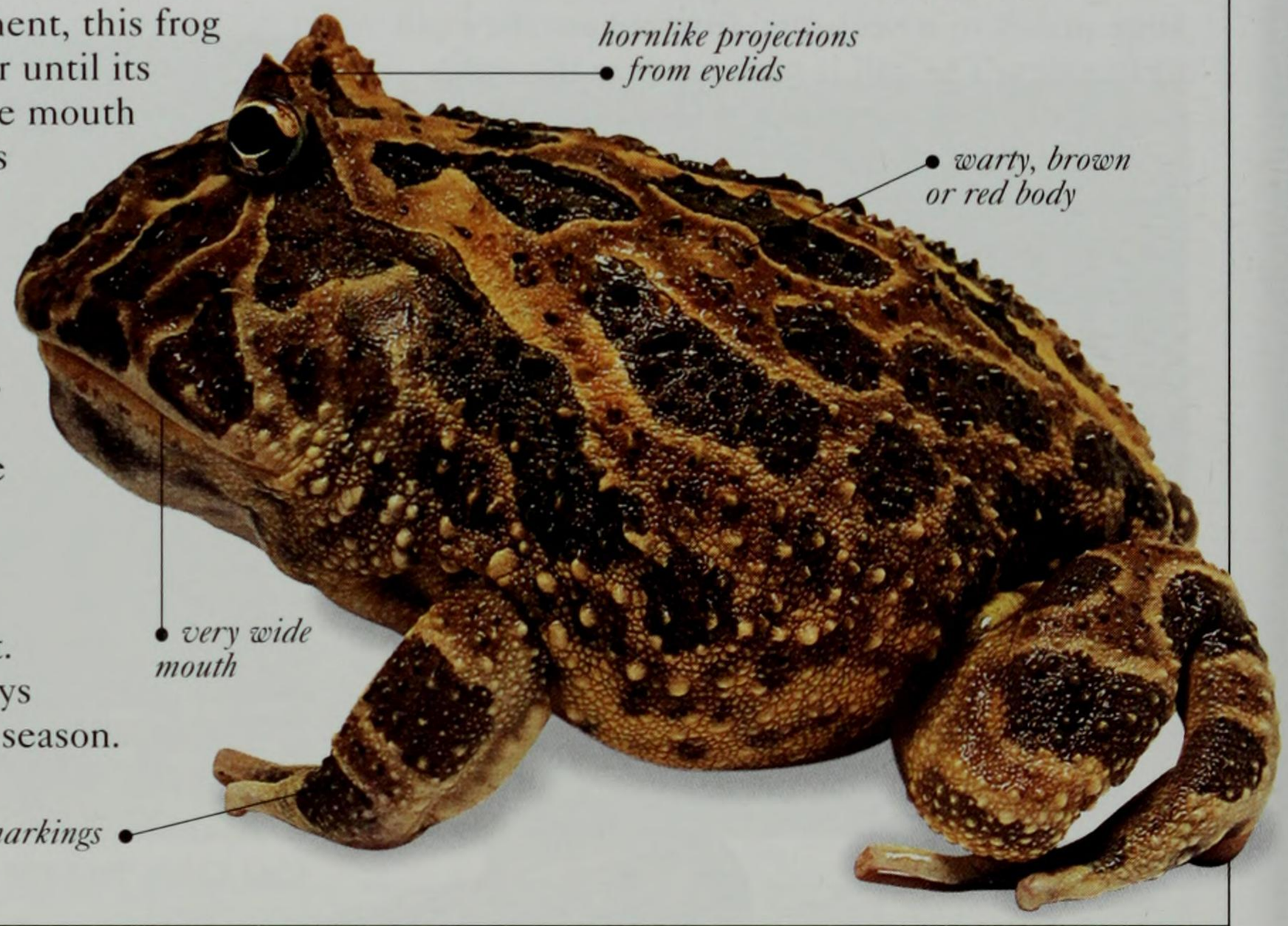


S. AMERICA

The massive, plump body of the Amazonian Horned Frog is as wide as it is long. The head and mouth are also huge. Coloration of this species is red or brown, with a dark brown pattern of spots, stripes, and blotches. Incapable of rapid movement, this frog hides among the leaf-litter until its prey comes along. Its huge mouth enables it to catch animals nearly as large as itself. Its "horns" are actually projections of the eyelids and enhance its camouflage among leaves. Males produce loud mating calls that resemble the bellowing of cattle.

• **OCCURRENCE** N.E. Brazil, Guyana, and W. Ecuador. In tropical forest.

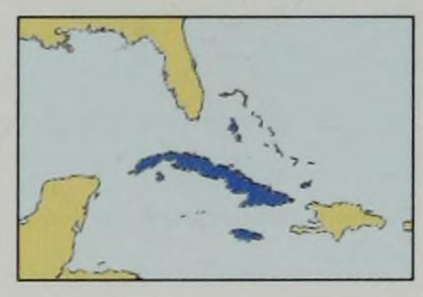
• **REPRODUCTION** Lays eggs in water in the rainy season.



Length 4–8in (10–20cm)	Habit Mostly terrestrial	Activity ◯

Family LEPTODACTYLIDAE	Species *Eleutherodactylus planirostris*	Status Locally common

GREENHOUSE FROG



CARIBBEAN

The Greenhouse Frog is brown or tan, with darker mottling or stripes on the back. It has well-developed adhesive disks on its fingers and toes. A good climber, it is sometimes found in bromeliads high above the ground but, during the day, it is more usually found under logs or rocks. Males produce a birdlike call from the ground. Eggs are laid in clutches of 3 to 26 under rocks, logs, or in debris, and hatch into miniature adults without going through a tadpole stage.

• **OCCURRENCE** Cuba, Bahamas, Turks and Caicos Islands, and Cayman Islands. (Introduced to Jamaica.) In wooded habitats and gardens.

• **REPRODUCTION** Lays eggs on land in summer.



Length 1–1½in (2.5–4cm)	Habit Entirely terrestrial	Activity ☾

Family LEPTODACTYLIDAE	Species *Leptodactylus pentadactylus*	Status Locally common

SOUTH AMERICAN BULLFROG



C. & S. AMERICA

This bullfrog is yellow or pale brown, with red, dark brown, and black markings. Large and powerfully built, it can be highly aggressive. Males defend territories at the edges of ponds and, when fighting with rivals, use a sharp, black spur on their thumbs as a weapon. Mating occurs in cavities next to the edges of flooded pools after heavy rain. Large numbers of eggs are deposited in a foam nest, which the male whips up with his hindlegs. The muscular hindlegs are eaten by humans.

• **OCCURRENCE** Central and South America. In forest in and around swamps, pools, lakes, and streams.

• **REPRODUCTION** Lays eggs in water in the rainy season.

• **REMARK** When caught, this frog emits a loud scream that often causes its captor to release it in surprise.



Length 3¼–8¾in (8–22cm)	Habit Mostly aquatic	Activity ☾

Family LEPTODACTYLIDAE	Species *Telmatobius culeus*	Status Locally common

TITICACA WATERFROG



S. AMERICA

The Titicaca Waterfrog has an egg-shaped body, with a broad head and a large mouth. It is pale brown, with a dark brown or black, mottled pattern. Adapted for life in the cold, oxygen-impoverished waters of Lake Titicaca in the high Andes, the Titicaca Waterfrog has very small lungs and relies primarily on oxygen taken in through the skin. Extensive folds in the skin increase the animal's surface area. This frog further enhances oxygen uptake by gently swaying from side to side in the water. It has fully webbed hindfeet, which enable it to swim strongly in the mud in search of prey. Little is known about the breeding habits of this frog. The male has a weak call, and clasps the female around her waist.

• **OCCURRENCE** Lake Titicaca, South America.

• **REPRODUCTION** Lays eggs in water in summer.



Length 3¼–4¾in (8–12cm)	Habit Entirely aquatic	Activity ◯

Family BUFONIDAE	Species *Atelopus zetecki*	Status Endangered

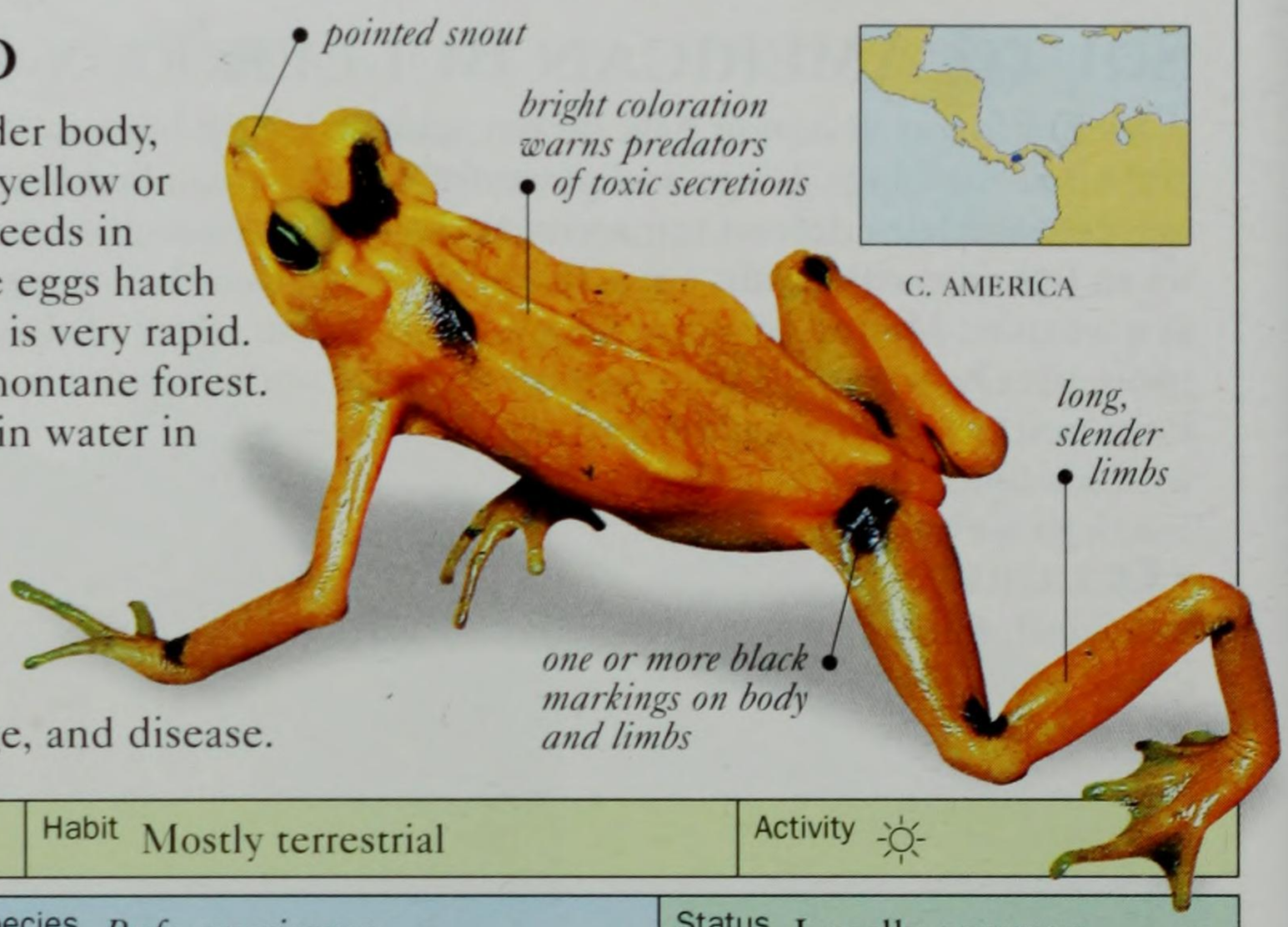
HARLEQUIN TOAD

Noted for its pointed snout, slender body, and long limbs, this frog is bright yellow or orange, with black markings. It breeds in flooded pools after heavy rain; the eggs hatch quickly and tadpole development is very rapid.

• **OCCURRENCE** Panama. In montane forest.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **REMARK** This is one of several frogs in Central America that have declined drastically in numbers, probably as a result of habitat destruction, climate change, and disease.



C. AMERICA

Length 1½–2¼in (4–5.5cm)	Habit Mostly terrestrial	Activity ☼

Family BUFONIDAE	Species *Bufo americanus*	Status Locally common

AMERICAN TOAD

This variable toad may be brown or brightly colored; many have a pale stripe down the back. It moves about by hopping. During breeding, which takes place in still water, males produce a musical trill 3 to 60 seconds long. Eggs are produced in strings.

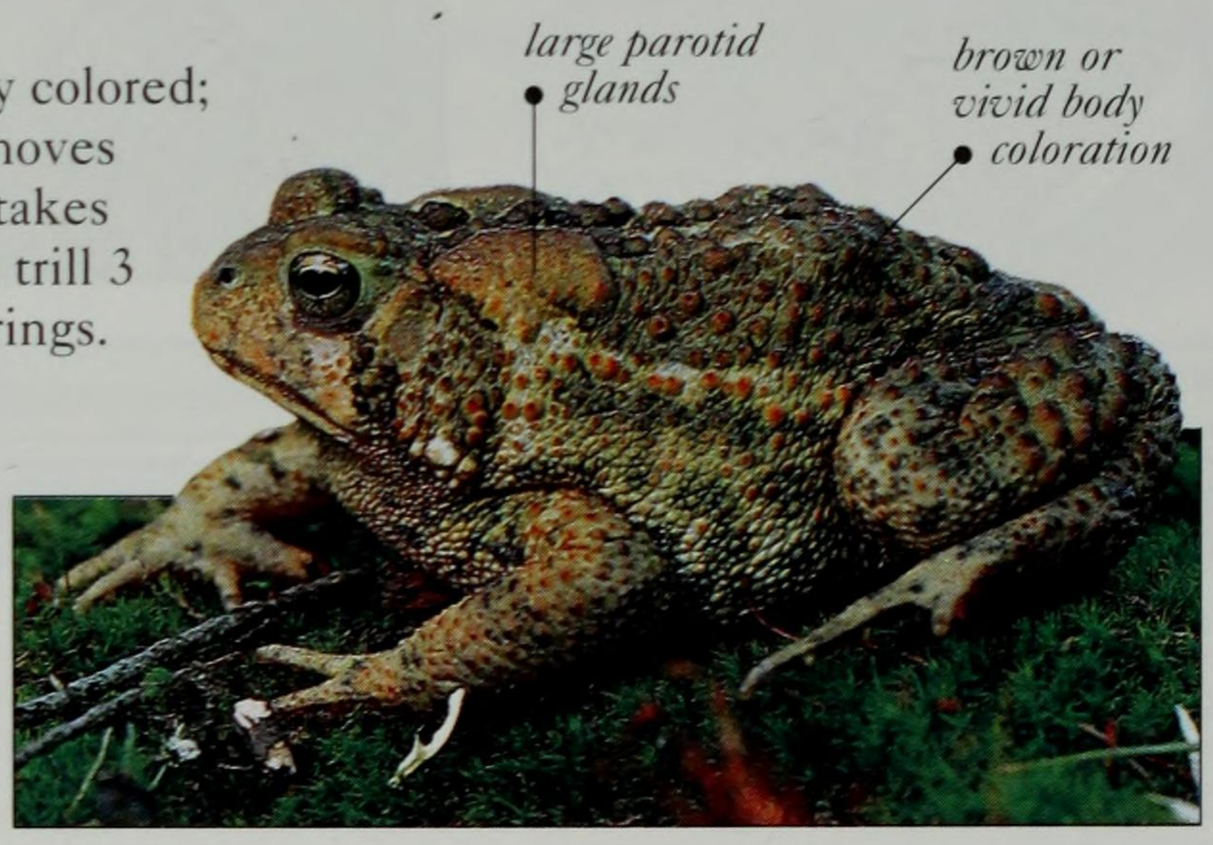
• **OCCURRENCE** E. US and Canada. In all damp habitats, including gardens.



N. AMERICA

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Fowler's Toad (*Bufo fowleri*).

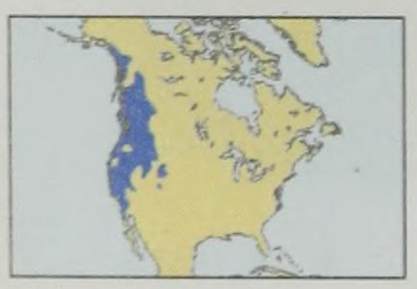


Length 2–3½in (5–9cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo boreas*	Status Endangered

WESTERN TOAD

This gray or greenish brown toad has a pale stripe down its back. It sometimes hops but usually walks. Except at high elevations, it spends the day underground, using the burrows of other animals. Males produce a chirplike call. Eggs are laid in ponds in strings.



N. AMERICA

• **OCCURRENCE** W. US and Canada. In desert, grassland, woodland, and montane meadows.

• **REPRODUCTION** Lays eggs in water in spring.



Length 2½–4¾in (6–12cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo bufo*	Status Common

EUROPEAN COMMON TOAD



EUROPE, AFRICA, ASIA

The European Common Toad is a robust species and grows to a very large size in the southern parts of its range, where the warts on its skin become horny spines (a northern specimen is shown here). Males arrive at breeding ponds and lakes up to 20 days before females and outnumber them by about three to one. Females are substantially larger than males and start to breed one year later. Males have no vocal sac and only rarely produce a mating call. Eggs are laid in long strings of jelly wrapped around vegetation.

• **OCCURRENCE** Europe, N.W. Africa, and Asia. In woodland, gardens, and fields.

• **REPRODUCTION** Lays eggs in water in spring.

• **REMARK** This species is known as the "gardener's friend" because it eats slugs and snails.



Length 3¼–8in (8–20cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo calamita*	Status Locally common

NATTERJACK TOAD



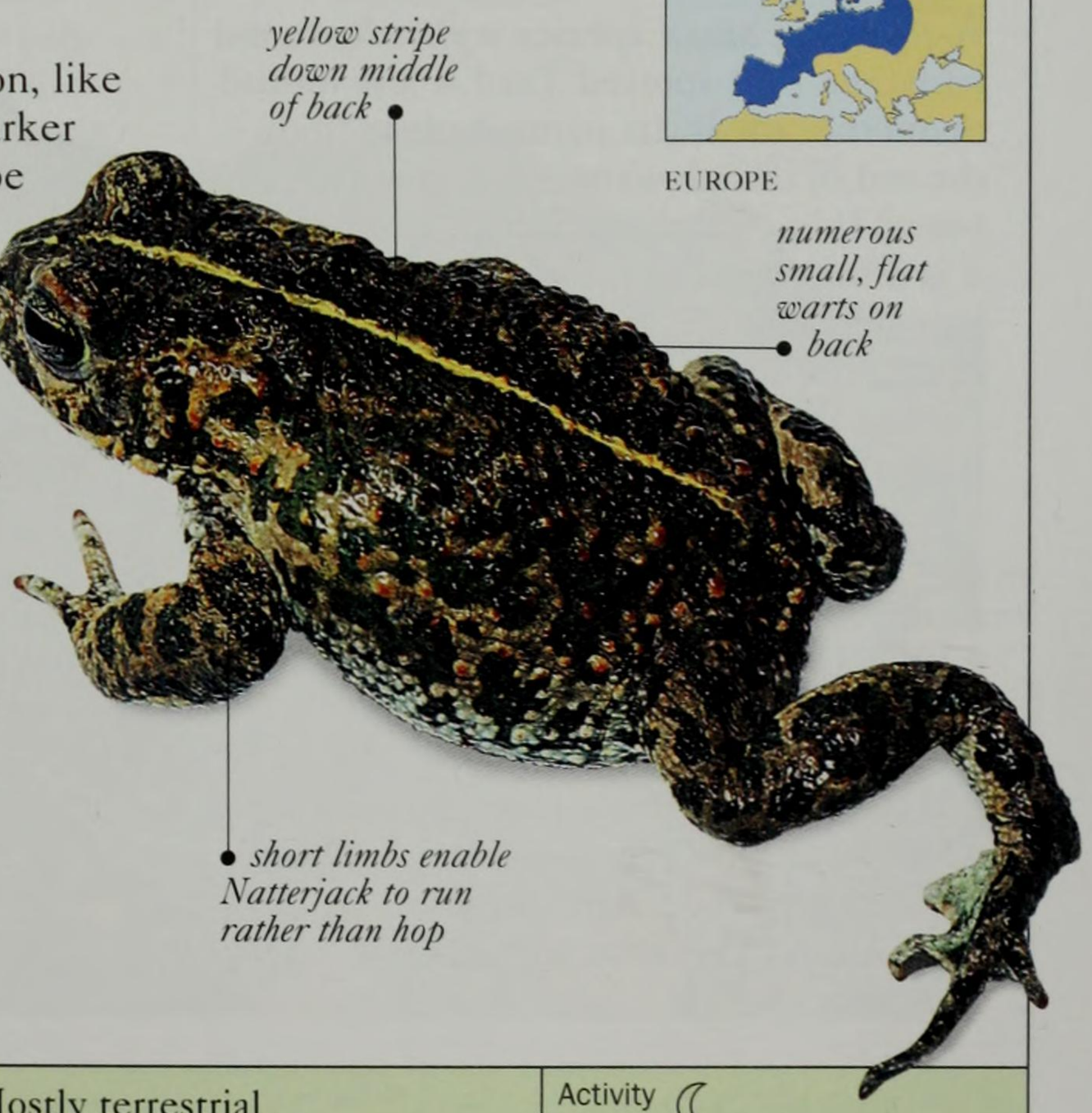
EUROPE

With shorter legs than other toads, the Natterjack Toad moves in a scuttling motion, like a mouse. It is brown, gray, or green with darker markings, usually with a bright yellow stripe down its back. By day, it hides in holes made by other animals or in a burrow that it digs itself. Breeding males have large vocal sacs and repeatedly produce a loud call lasting one or two seconds. The breeding season is longer than that of most toads, and some individuals mate more than once a year. Breeding takes place in ponds and lakes, and eggs are laid in strings among weeds.

• **OCCURRENCE** W. and C. Europe and Russia. In various habitats, including sand dunes, heath, and mountains.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **REMARK** The Natterjack Toad is an endangered species in the UK.

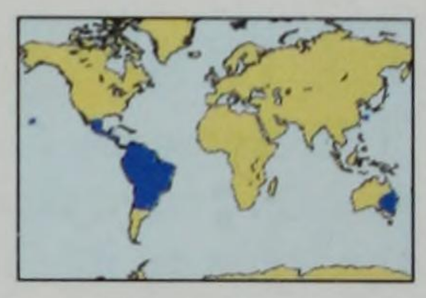


Length 2–4in (5–10cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo marinus*	Status Locally common

MARINE TOAD

Also known as the Cane Toad, this formidable creature is the world's largest toad. It is extremely robust, with a massive head. The warty skin is brown or tan, with darker patches, and its underside is creamy white. The diet of this species includes other frogs and toads.



WORLDWIDE

• **OCCURRENCE** Central and South America. (Introduced to other parts of the world.) In most habitats, including towns.

• **REPRODUCTION** Lays eggs in water at any time of year.

• **REMARK** Since 1920, the Marine Toad has been introduced to many countries to control insect pests of sugarcane. In Australia, it has become a serious pest that has had a harmful effect on native frogs and toads.



Length 4–9½in (10–24cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo punctatus*	Status Locally common

RED-SPOTTED TOAD

A relatively small species with a flattened body, the Red-spotted Toad is less rotund than other toads. Its name derives from the red or orange warts on its gray to brown skin. A highly effective climber, it is often found in steep, rocky habitats, where it hides in crevices during the day to avoid predators. During breeding, males call to females from the water, forming small choruses of two to six toads. They produce a very distinctive high-pitched trill that can continue for four to ten seconds.

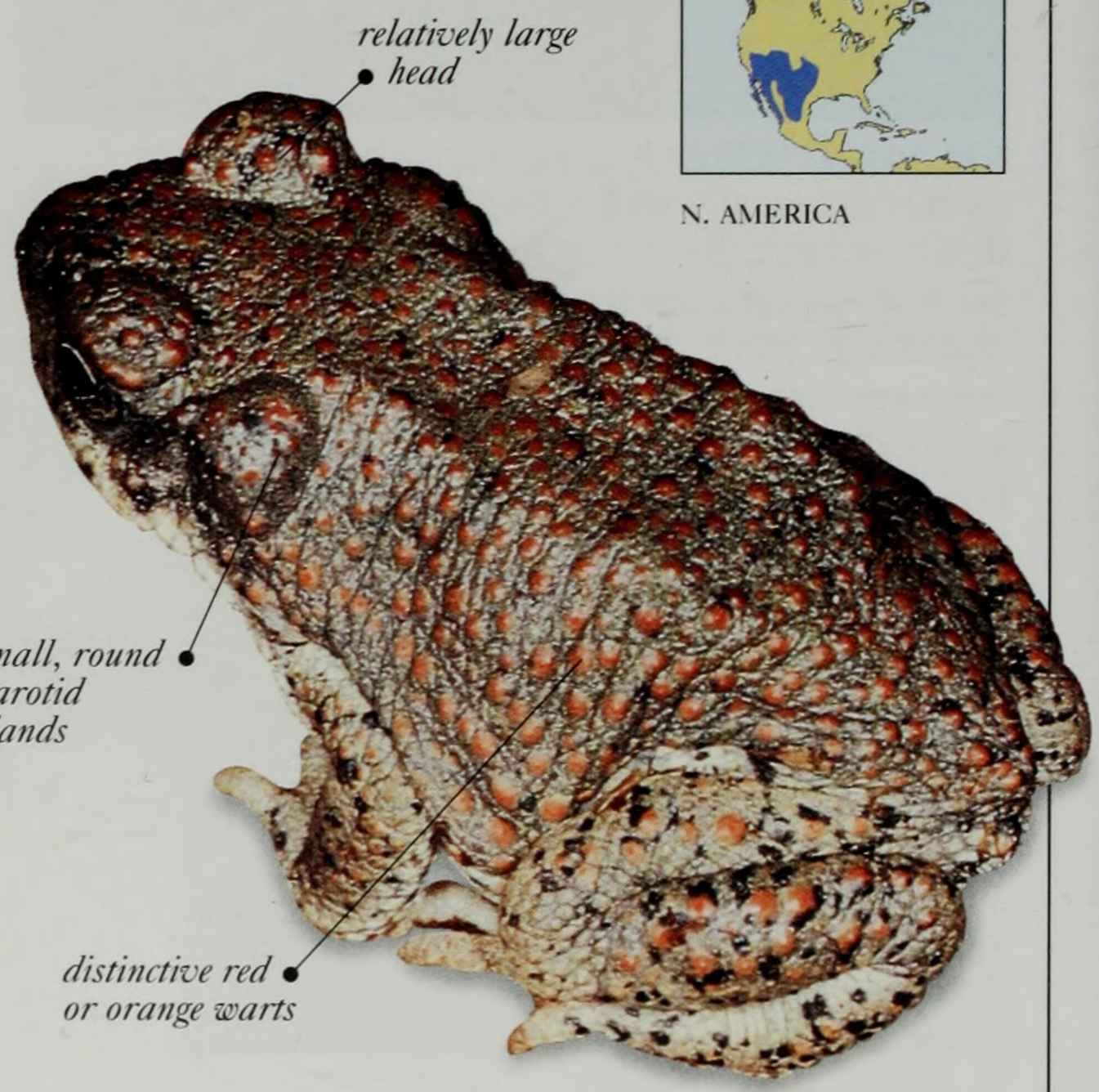


N. AMERICA

• **OCCURRENCE** S.W. US and Mexico. In rough, rocky regions and grassland.

• **REPRODUCTION** Lays eggs in water from spring to autumn.

• **REMARK** The Red-spotted Toad often hybridizes with other *Bufo* species.



Length 1¼–2¾in (3–7cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Bufo viridis*	Status Locally common

GREEN TOAD

This robust species has grayish or olive-green, warty skin with distinctive green patches. It is more brightly colored than most toads, but becomes paler when it emerges from hiding. The Green Toad is found mostly in sandy habitats, where it digs a burrow with its hindlimbs. During breeding, the slightly smaller male is territorial and produces a high-pitched, trill-like call to keep rival males away and to attract females.

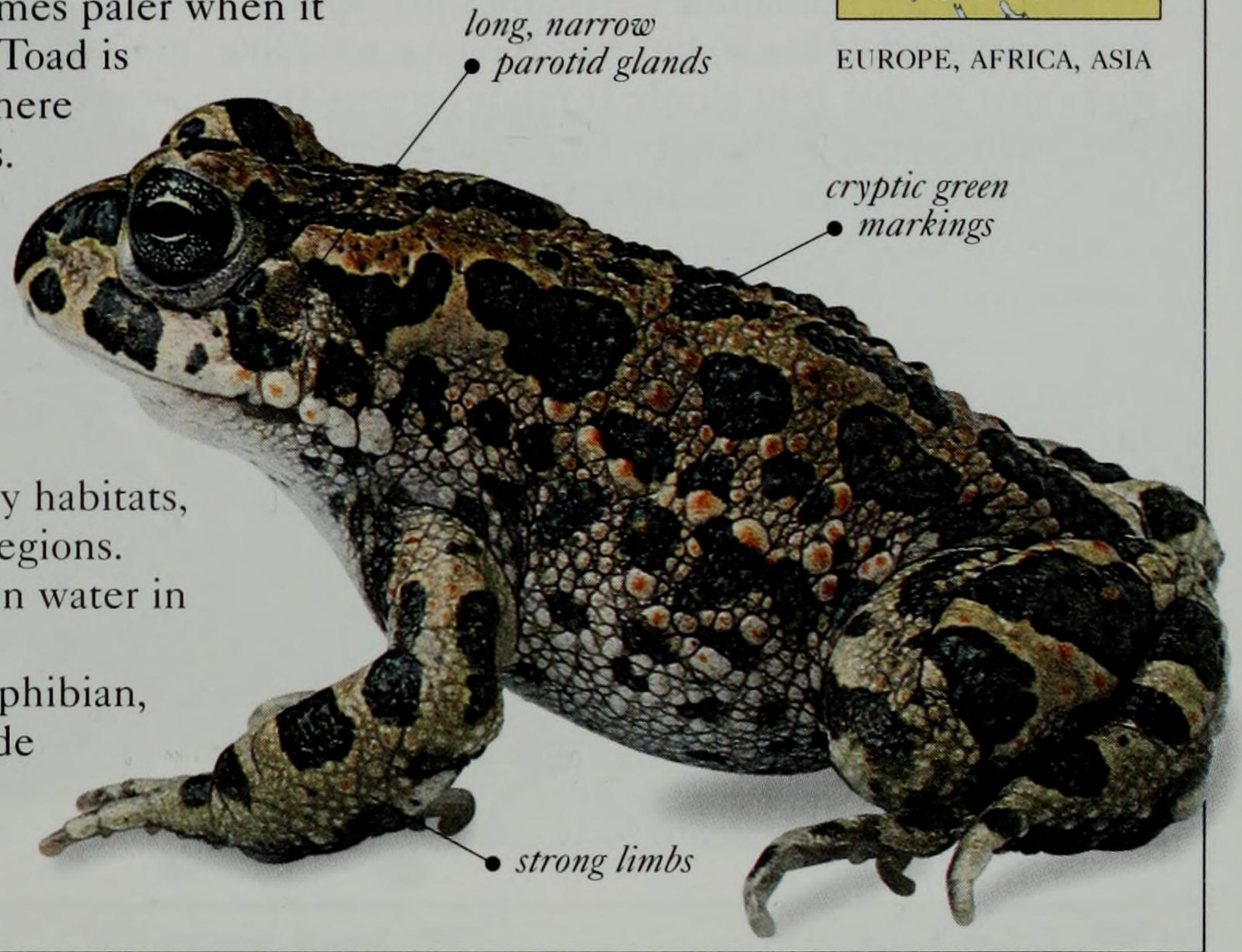
• **OCCURRENCE** E. Europe, N. Africa, and Asia. In lowland, dry habitats, and occasionally in mountainous regions.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **REMARK** Unusually for an amphibian, the Green Toad lives well alongside humans and is often seen catching insects under street lights at night.



EUROPE, AFRICA, ASIA



Length 3½–4¾in (9–12cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Capensibufo tradouwi*	Status Locally common

TRADOUW TOADLET

A relatively small toad, with an elongated body, the Tradouw Toadlet has smooth skin, covered on the upper surface with blisterlike warts and ridges. Highly variable in color, it is usually pale gray, with dark brown or black mottling and a number of brick-red spots; there is usually a pale stripe down the middle of its back. The legs are long and muscular, and the eyes protrude from the head. There is no webbing between the toes. The parotid glands are prominent and pear-shaped. Breeding takes place in moist depressions and temporary pools after spring rains. The males call to females, producing a squawklike call.

• **OCCURRENCE** S.W. Cape, S. Africa. In mountainous regions.

• **REPRODUCTION** Lays eggs in water in spring.



AFRICA



Length 1¼–1¾in (3–4.5cm)	Habit Mostly terrestrial	Activity ☾

Family BUFONIDAE	Species *Pedostibes hosii*	Status Locally common

BOULENGER'S ASIAN TREE TOAD

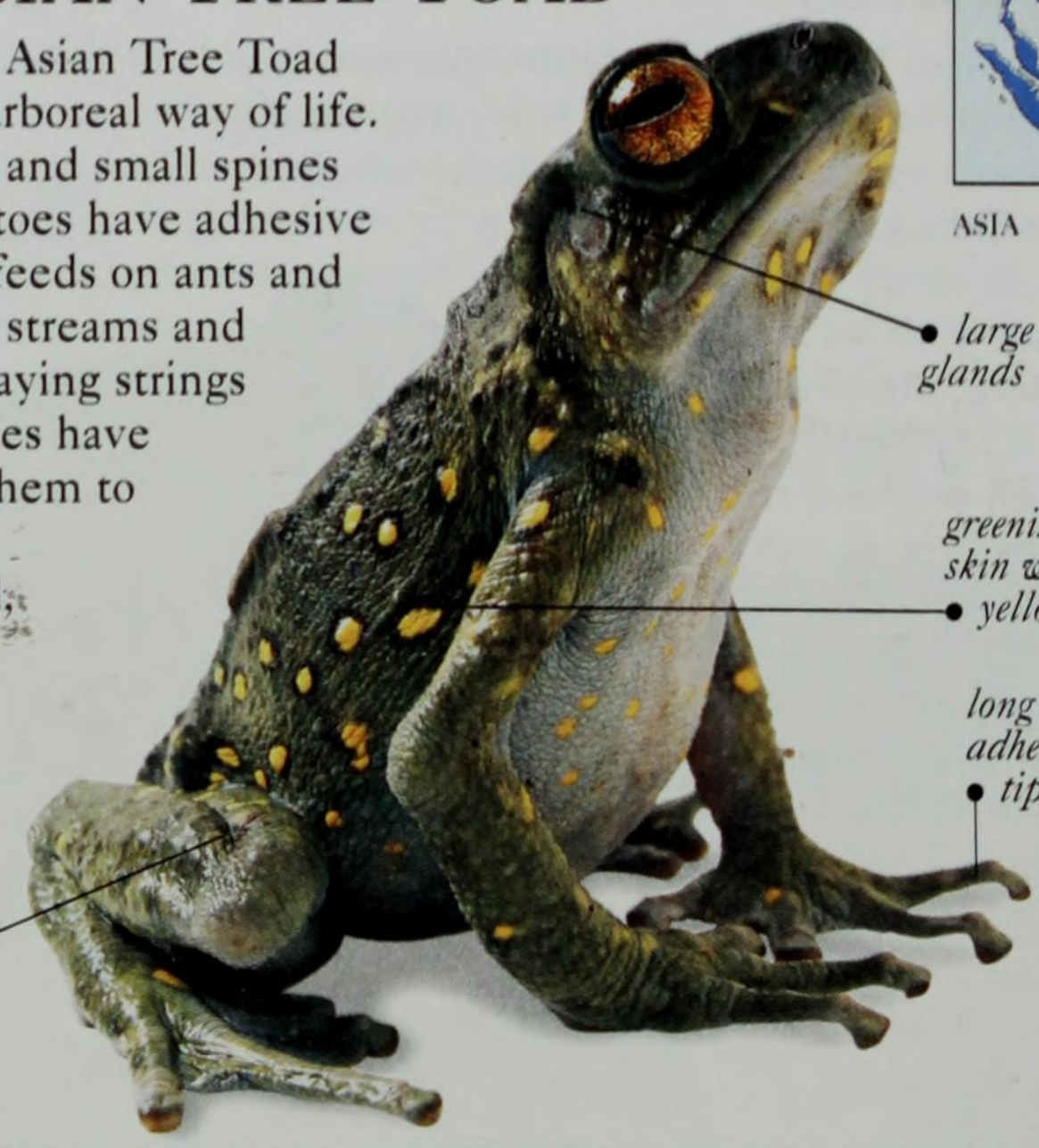
Unlike most toads, Boulenger's Asian Tree Toad is a climber and leads a largely arboreal way of life. Its skin has the numerous warts and small spines that are typical of toads, but its toes have adhesive disks that enable it to climb. It feeds on ants and lives in trees and bushes beside streams and rivers. This is where it breeds, laying strings of eggs in the water. The tadpoles have suckerlike mouths that enable them to cling to rocks.

• **OCCURRENCE** S. Thailand, Malaysia, Sumatra, and Borneo. In forest.

• **REPRODUCTION** Lays eggs in water in the rainy season.



ASIA



Length 2–4in (5–10cm)	Habit Mostly terrestrial	Activity ☾

Family PSEUDIDAE	Species *Pseudis paradoxa*	Status Locally common

PARADOXICAL FROG

A powerful swimmer, the Paradoxical Frog has strong, muscular hindlegs and fully webbed hindfeet. The toes are very long since they contain an extra bone. These are used to stir up the mud to disturb prey. Only the eyes and nostrils, which point upward, protrude above the water surface. The eggs, laid in floating foam nests, contain sufficient yolk for the tadpoles to live 6–10 weeks without feeding.

• **OCCURRENCE** South America and Trinidad. In ponds, lakes, and swamps.

• **REPRODUCTION** Lays eggs in water in the rainy season.

• **REMARK** The common name is derived from the fact that the tadpoles grow up to 10in (25cm) long, four times larger than the adults. For this reason, this species is also known as the Shrinking Frog.



S. AMERICA, TRINIDAD



Length 2–2¾in (5–7cm)	Habit Entirely aquatic	Activity ◯

Family HYLIDAE	Species *Acris crepitans*	Status Common

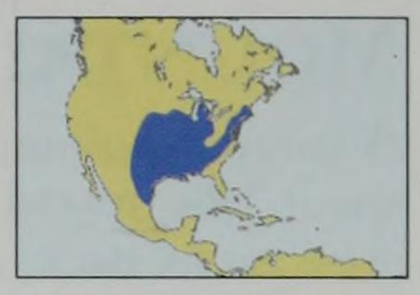
NORTHERN CRICKET FROG

This small frog has rough skin, a blunt snout, and relatively short legs, with webbing between the toes of the hindlimbs. Found in or around water, the Northern Cricket Frog does not climb, but it is able to hop large distances. It is often seen raising its body temperature by basking in the sun. In the breeding season, large numbers converge at ponds. The males call loudly, producing a series of metallic clicks reminiscent of the sound of crickets. In some areas, the tadpoles have black tips to their tails. These distract predatory dragonfly larvae, thus protecting more vulnerable parts of the body from attack.

• **OCCURRENCE** S.E. and E. US. In vegetation near water.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Southern Cricket Frog (*Acris gryllus*).



N. AMERICA



Length ⅝–1½in (1.5–4cm)	Habit Mostly terrestrial	Activity ☾ ☼

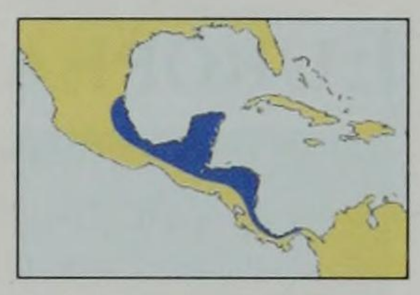
Family HYLIDAE	Species *Agalychnis callidryas*	Status Locally common

RED-EYED TREEFROG

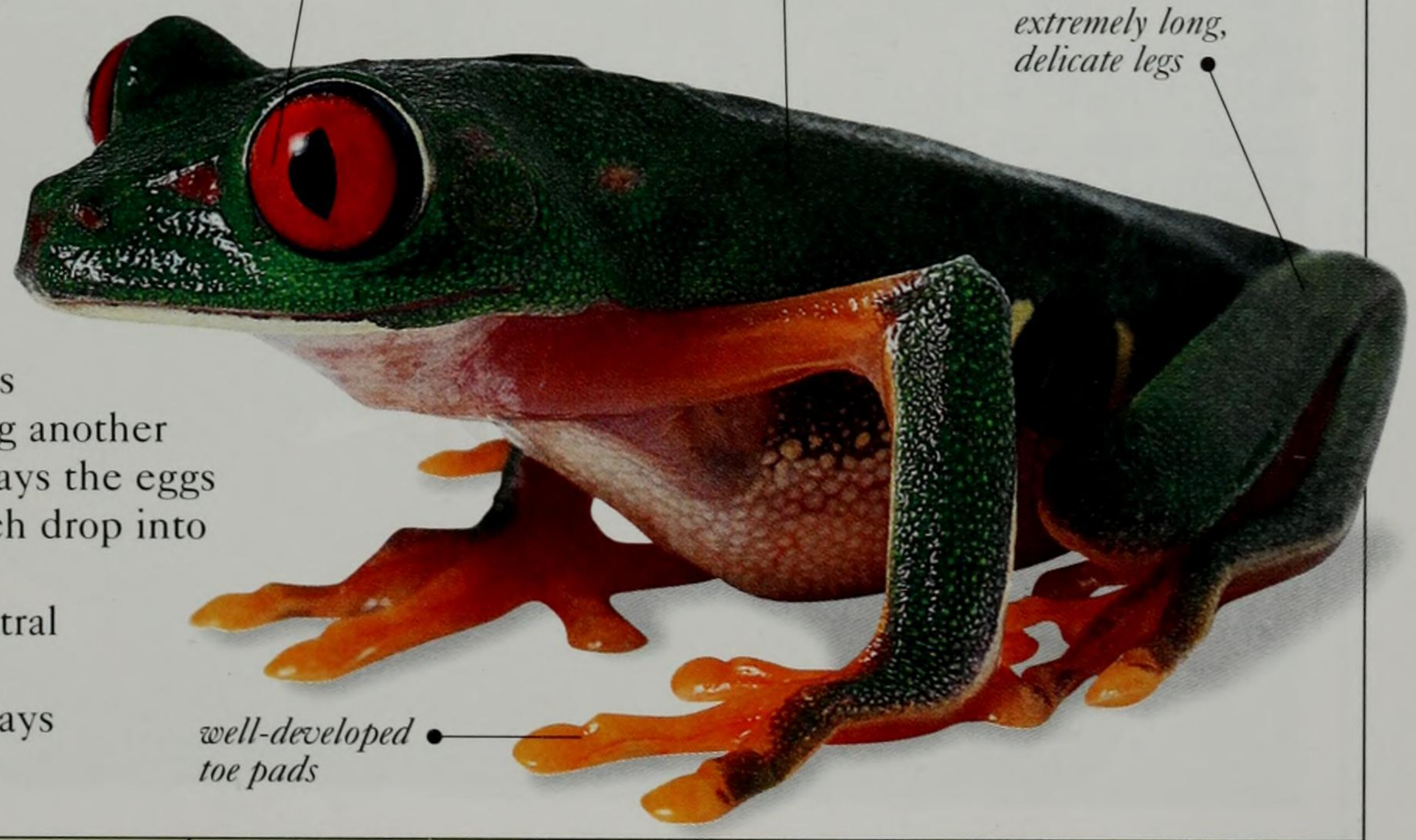
This bright green treefrog has yellow and blue stripes on its sides and blue inner thighs, but this distinctive coloring can be seen only when the frog moves. An excellent climber, it has very long legs and adhesive pads on its toes. Mating takes place in trees overhanging water, with many frogs gathering in the same tree. Males attract females by making a soft, clicking sound. The smaller male climbs onto the back of a female, and she then takes up water from the pond before climbing up into the tree. She lays a batch of eggs on foliage and then, still carrying the male, returns to the water before laying another batch. After about five days the eggs hatch into tadpoles, which drop into the water.

• **OCCURRENCE** Central America. In forest.

• **REPRODUCTION** Lays eggs on land in summer.



C. AMERICA



Length 1½–2¾in (4–7cm)	Habit Entirely terrestrial	Activity ☾

Family HYLIDAE	Species *Gastrotheca monticola*	Status Locally common

MOUNTAIN MARSUPIAL FROG

A compact, plump frog with a wide head and a rounded snout, this upland species is usually brown with green areas on its back, although some frogs are entirely green. It has webbed toes on its hindlimbs, but not on its forelimbs. Its common name is derived from the enclosed brood pouch on the back of the female. As the fertilized eggs are laid, the male packs them into the pouch and this is where they develop. They are eventually released into pools of water as well-grown tadpoles, the female helping them to escape by opening the pouch with her toes.

• **OCCURRENCE**
S. Ecuador and N. Peru. In montane forest.

• **REPRODUCTION**
Tadpoles released from brood pouch into water in spring and summer.



S. AMERICA



Length 1½–2½in (4–6cm)	Habit Entirely terrestrial	Activity ☾

Family HYLIDAE	Species *Hyla arborea*	Status Locally common

EUROPEAN TREEFROG

An expert climber and jumper, the European Treefrog has slender limbs and adhesive disks on its toes. It is typically bright green in color, with a dark stripe running through the eyes and almost the length of its body, but it may also be yellow or brown. Individuals are able to change color quite rapidly. In the breeding season, males gather in trees and bushes beside ponds, calling in loud choruses to attract females. Mating pairs descend to the water to lay their eggs.

• **OCCURRENCE** Most of Europe. In well-vegetated habitats.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **SIMILAR SPECIES**
Stripeless Treefrog (*Hyla meridionalis*).



EUROPE



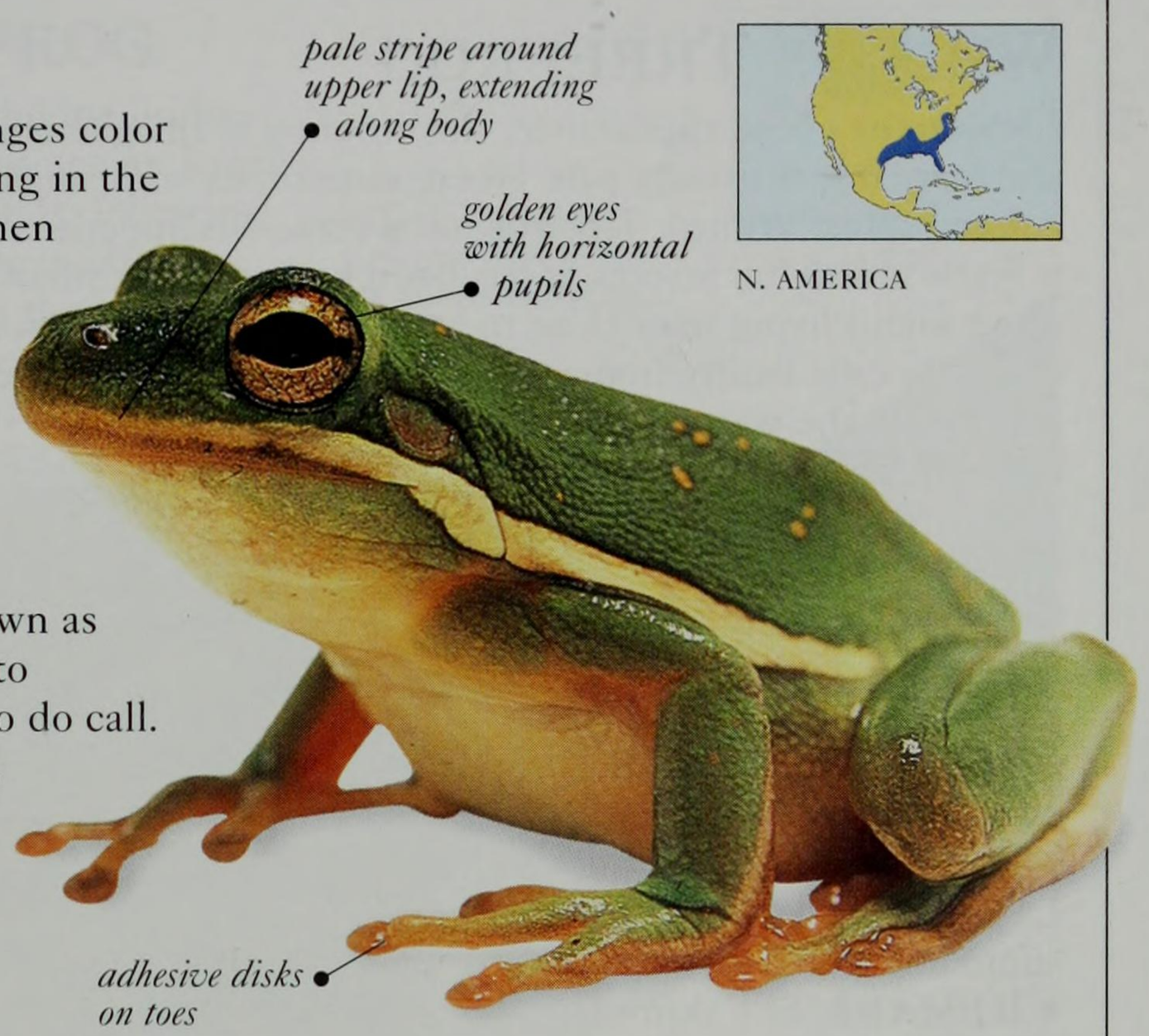
Length 1¼–2in (3–5cm)	Habit Mostly terrestrial	Activity ☾

Family HYLIDAE	Species *Hyla cinerea*	Status Common

GREEN TREEFROG

Usually bright green, this treefrog changes color fairly rapidly, turning yellow when calling in the breeding season, and becoming gray when inactive in cold weather. It is an accomplished climber, with adhesive disks on its toes, and it is able to leap large distances. It often appears at night at windows, where it feeds on insects drawn to the light. Breeding takes place near water. Males call very loudly in choruses, although some, known as satellite males, stay silent and attempt to intercept females attracted to those who do call.

- **OCCURRENCE** S.E. US. In woods.
- **REPRODUCTION** Lays eggs in water in spring.
- **REMARK** It is colloquially known as the "rain frog" because it calls just before and during wet weather.



N. AMERICA

Length 1¼–2½in (3–6cm)	Habit Mostly terrestrial	Activity ☾

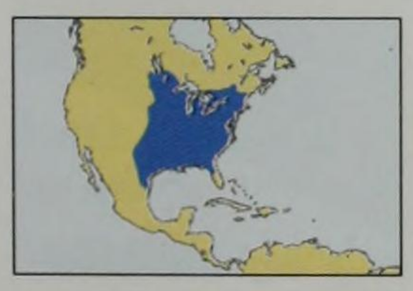
Family HYLIDAE	Species *Hyla chrysoscelis*	Status Locally common

GRAY TREEFROG

The gray coloring of this species, combined with the warty texture of its skin, helps it to blend perfectly with the lichen on the bark of the trees in which it lives. It is able to change color quickly, becoming darker when cold, paler in bright light. In the breeding season, males gather by water and call very loudly to attract females. The tadpoles are distasteful to predators and have red tails to advertise the fact.

- **OCCURRENCE** E. US. In woodland.
- **REPRODUCTION** Lays eggs in water in spring.
- **SIMILAR SPECIES** Gray Treefrog (*Hyla versicolor*). This species looks identical to *H. chrysoscelis*, but has twice as many chromosomes and a slower, deeper mating call.
- **REMARK** In very cold weather, glycerol in the blood acts as "antifreeze" and prevents the treefrog from freezing to death.





N. AMERICA

Length 1¼–2½in (3–6cm)	Habit Mostly terrestrial	Activity ☾

Family HYLIDAE	Species *Litoria caerulea*	Status Locally common

WHITE'S TREEFROG

Despite its obese appearance, this treefrog is an agile climber and leaper. It is usually pale green, sometimes with small, cream-colored spots. White's Treefrog has a voracious appetite and, while it feeds mostly on insects, it has been known to eat small rats. It is often found living in or close to human habitations. During mating, the male calls loudly from perches close to the pond edge, then the pair enters the water. The female ejects her eggs forcibly, dispersing them into the pond, where they sink to the bottom.



AUSTRALASIA

• OCCURRENCE N.E. Australia and S. New Guinea. In woodland.

• REPRODUCTION Lays eggs in water in summer.

• REMARK The skin of White's Treefrog contains various compounds that are antiviral and antibacterial. One of these compounds (caerulein) is known to reduce blood pressure in humans.



Length 2–4in (5–10cm)	Habit Mostly terrestrial	Activity ☾

Family HYLIDAE	Species *Litoria infrafrenata*	Status Locally common

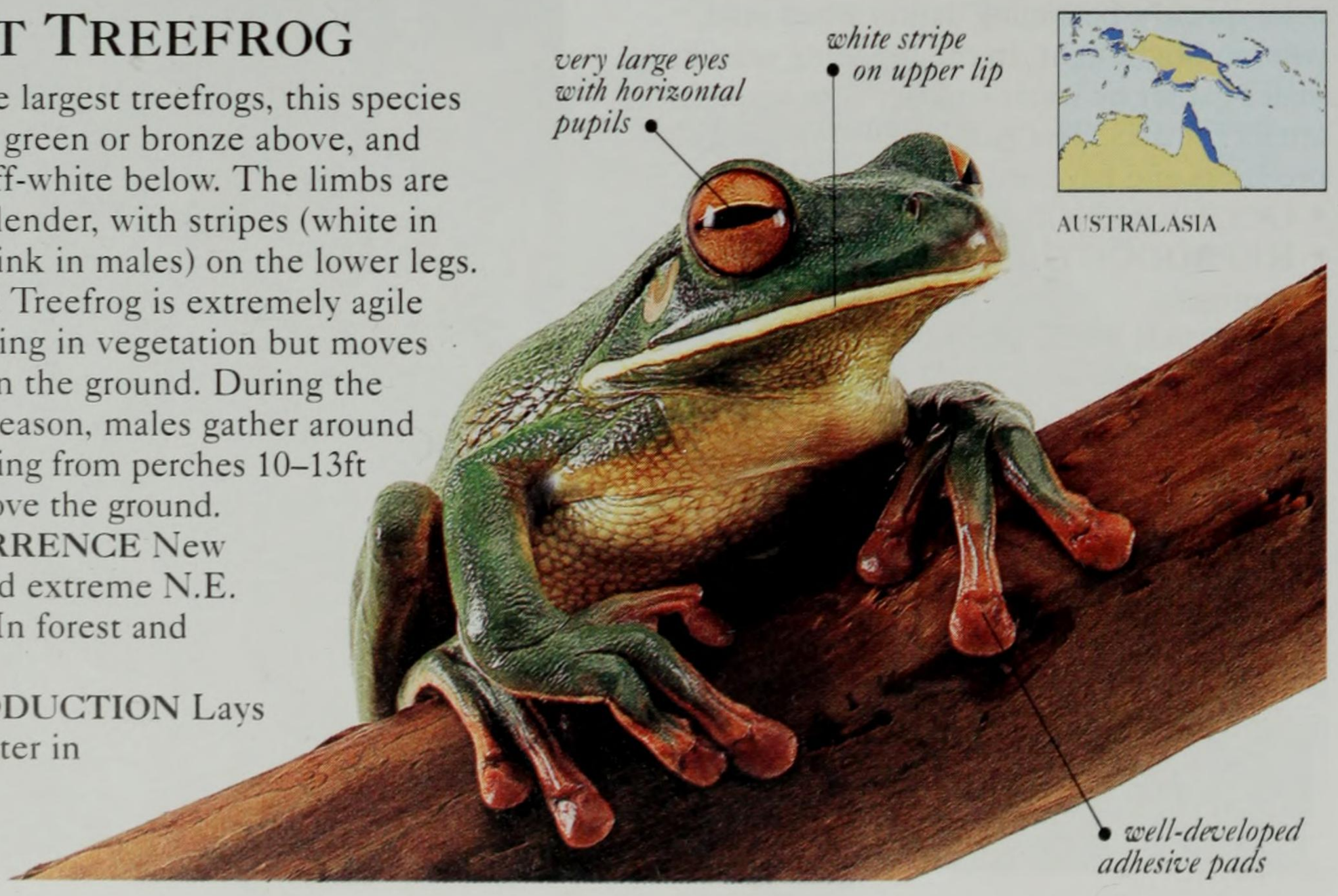
GIANT TREEFROG

One of the largest treefrogs, this species is uniform green or bronze above, and white or off-white below. The limbs are long and slender, with stripes (white in females, pink in males) on the lower legs. The Giant Treefrog is extremely agile when moving in vegetation but moves clumsily on the ground. During the breeding season, males gather around ponds, calling from perches 10–13ft (3–4m) above the ground.

AUSTRALASIA

• OCCURRENCE New Guinea and extreme N.E. Australia. In forest and gardens.

• REPRODUCTION Lays eggs in water in summer.



Length 4–5½in (10–14cm)	Habit Mostly terrestrial	Activity ☾

Family HYLIDAE	Species *Ololygon rubra*	Status Locally common

RED-SNOUTED TREEFROG

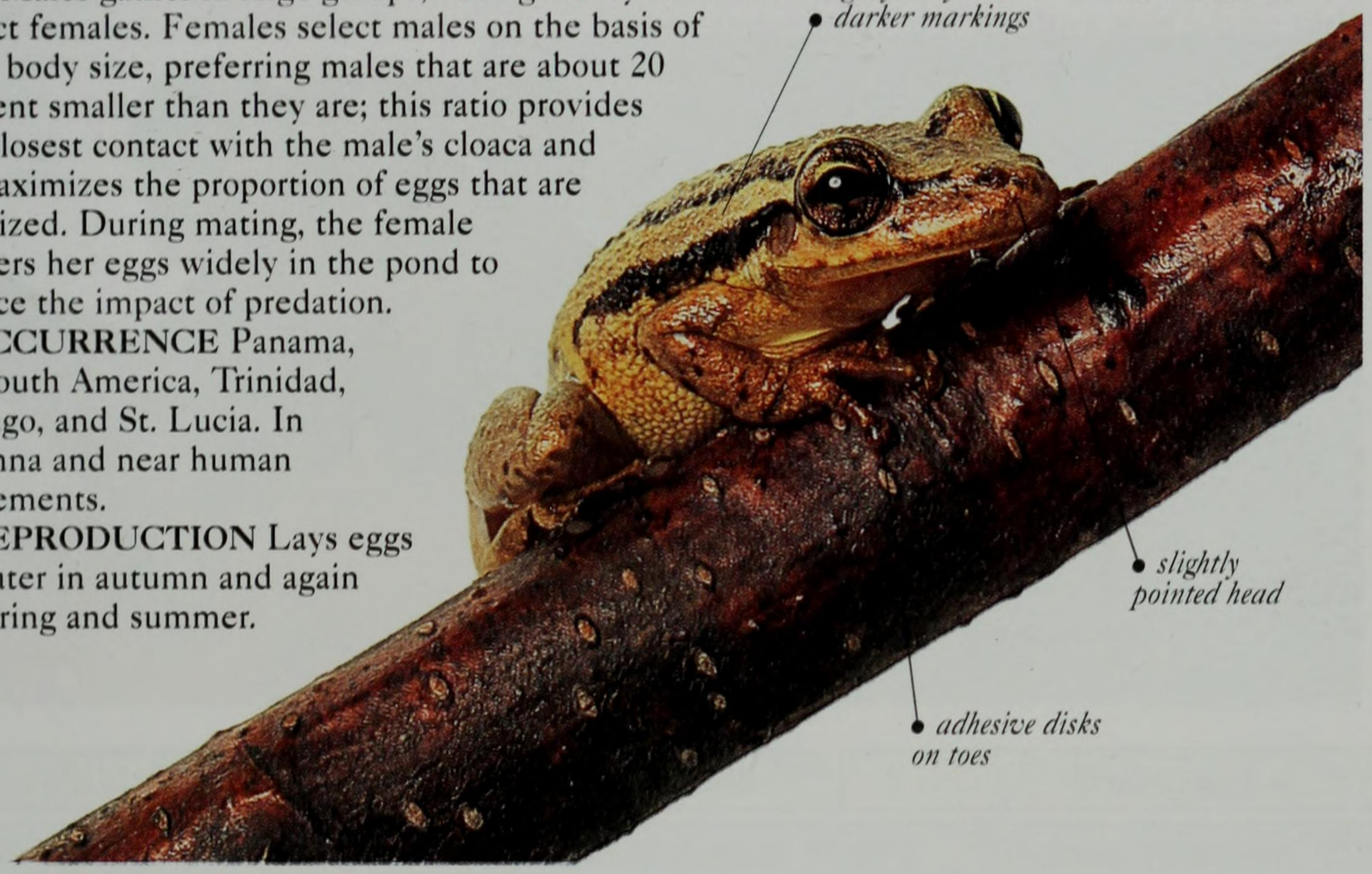
A slender silver, gray, or yellow frog with long limbs, the Red-snouted Treefrog (sometimes known as *Scinax rubra*) gathers to breed in ephemeral ponds, following rain. Males gather in large groups, calling loudly to attract females. Females select males on the basis of their body size, preferring males that are about 20 percent smaller than they are; this ratio provides the closest contact with the male's cloaca and so maximizes the proportion of eggs that are fertilized. During mating, the female scatters her eggs widely in the pond to reduce the impact of predation.

• **OCCURRENCE** Panama, N. South America, Trinidad, Tobago, and St. Lucia. In savanna and near human settlements.

• **REPRODUCTION** Lays eggs in water in autumn and again in spring and summer.



C. & S. AMERICA



Length 1–1½in (2.5–4cm)	Habit Mostly terrestrial	Activity ☾

Family HYLIDAE	Species *Phyllomedusa hypochondrialis*	Status Locally common

ORANGE-SIDED LEAF FROG

Native to dry habitats, this small green-and-orange frog reduces water loss by wiping a waxy secretion of the skin glands over its body. When attacked, it feigns death, rolling onto its back with its legs tucked up. It produces an unpleasant odor when handled and may be toxic or distasteful to predators. Eggs are wrapped in leaves hanging over water; the female surrounds the eggs with empty egg capsules to provide moisture in dry weather.

• **OCCURRENCE** Panama and Colombia. In arid habitats.

• **REPRODUCTION** Lays eggs on land in spring and summer.



C. & S. AMERICA



Length 1½–2in (4–5cm)	Habit Entirely terrestrial	Activity ☾

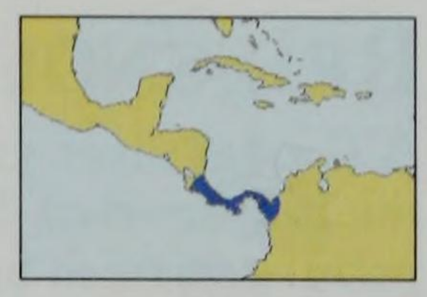
Family CENTROLENIDAE	Species *Centrolenella valerioi*	Status Locally common

LA PALMA GLASS FROG

A small and delicate creature, the La Palma Glass Frog is so called because the skin on its underside is transparent, and its internal organs are visible. It is an expert climber with long, slender limbs and very well-developed adhesive disks on the toes, enabling it to climb stems and cling to smooth leaves. The eyes are very large and prominent. Eggs are attached to leaves hanging over streams, and the male guards them against insect predators such as wasps. Tadpoles drop into the water as they hatch and burrow into the mud on the bottom of the stream.

• **OCCURRENCE** Central America. In tropical forest.

• **REPRODUCTION** Lays eggs over water in the rainy season.



C. AMERICA



Length ¾–1¼in (2–3cm)	Habit Mostly terrestrial	Activity ☾

Family DENDROBATIDAE	Species *Dendrobates auratus*	Status Locally common

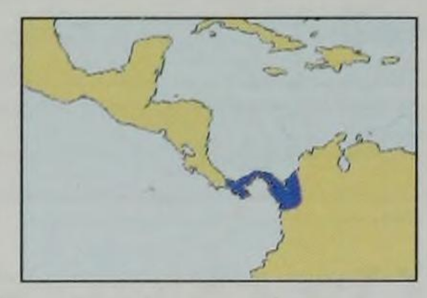
BLACK-AND-GREEN POISON-DART FROG

This brilliantly colored species has glossy black-and-green skin, which provides ideal camouflage in lush tropical forest, and a rounded snout. As its name suggests, its deadly poison was used by tribesmen to coat darts that were fired from blowpipes. Females play the more active role in initiating mating and lay several clutches of 5 to 13 eggs in leaf-litter. Males care for the young, often protecting more than one clutch at once. When the eggs hatch, the male carries the tadpoles, one or two at a time, to small pools in the leaves of bromeliads or in tree holes.

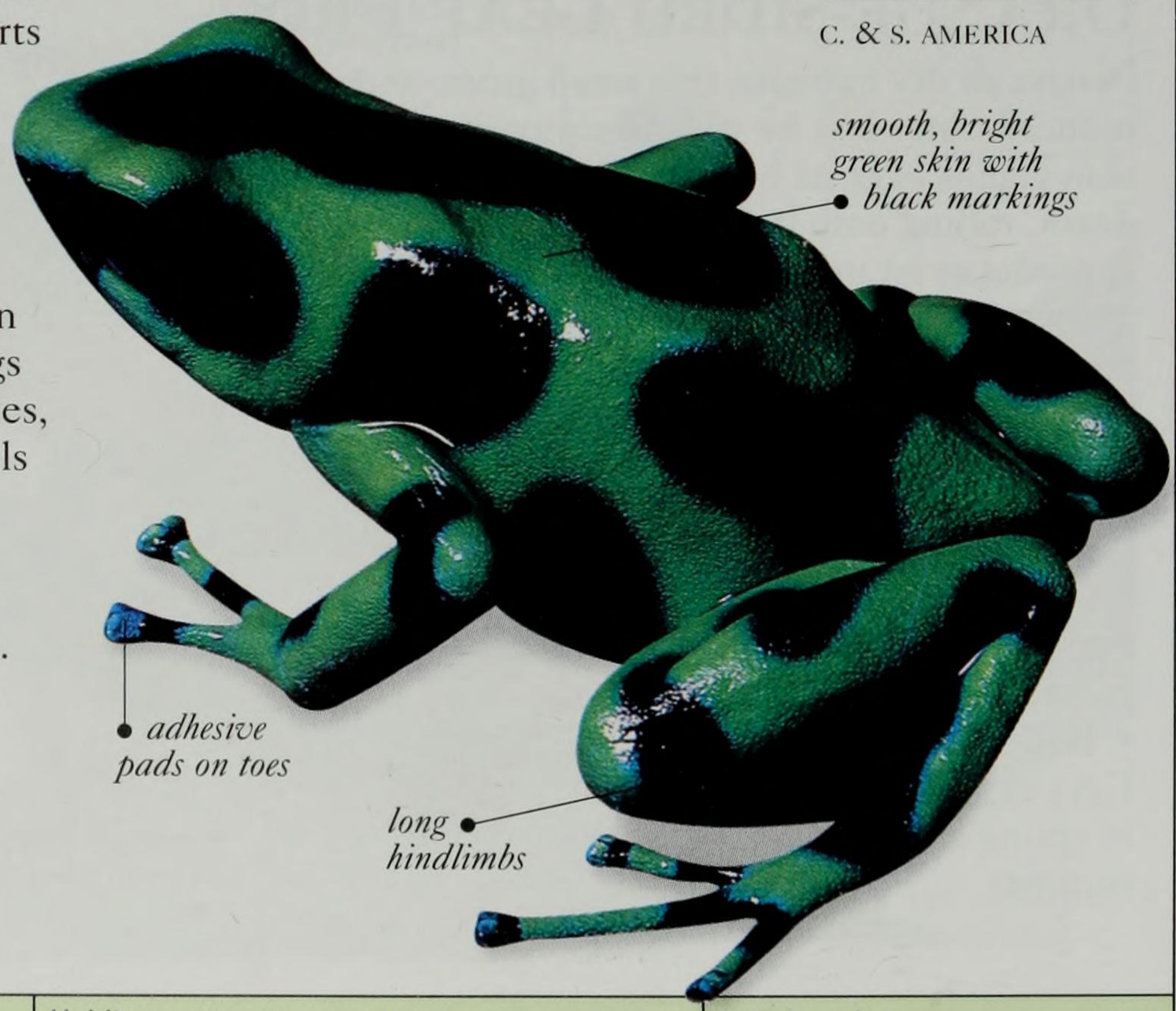
• **OCCURRENCE** Panama and N.W. Colombia. In tropical forest.

• **REPRODUCTION** Lays eggs on land in the rainy season.

• **REMARK** This species is common in cocoa plantations, where it eats insects feeding on rotting fruit.



C. & S. AMERICA



Length 1–2½in (2.5–6cm)	Habit Entirely terrestrial	Activity ☼

Family DENDROBATIDAE	Species *Dendrobates azureus*	Status Endangered

BLUE POISON-DART FROG



S. AMERICA

A brilliant electric-blue coloration, flecked with black, warns predators that this species is highly poisonous. Females produce several clutches of 5 to 13 eggs in leaf-litter on the forest floor. Males care for the eggs, often protecting more than one clutch at once. When the eggs hatch, the tadpoles wriggle onto the male's back. The male carries them, one or two at a time, to small pools in the leaves of bromeliads or in tree holes.

• **OCCURRENCE** N.E. South America. On vegetation in tropical forest.

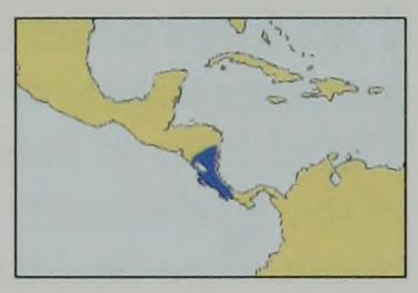
• **REPRODUCTION** Lays eggs on land in the rainy season.



Length 1¼–2in (3–5cm)	Habit Entirely terrestrial	Activity ☼

Family DENDROBATIDAE	Species *Dendrobates pumilio*	Status Locally common

STRAWBERRY POISON-DART FROG



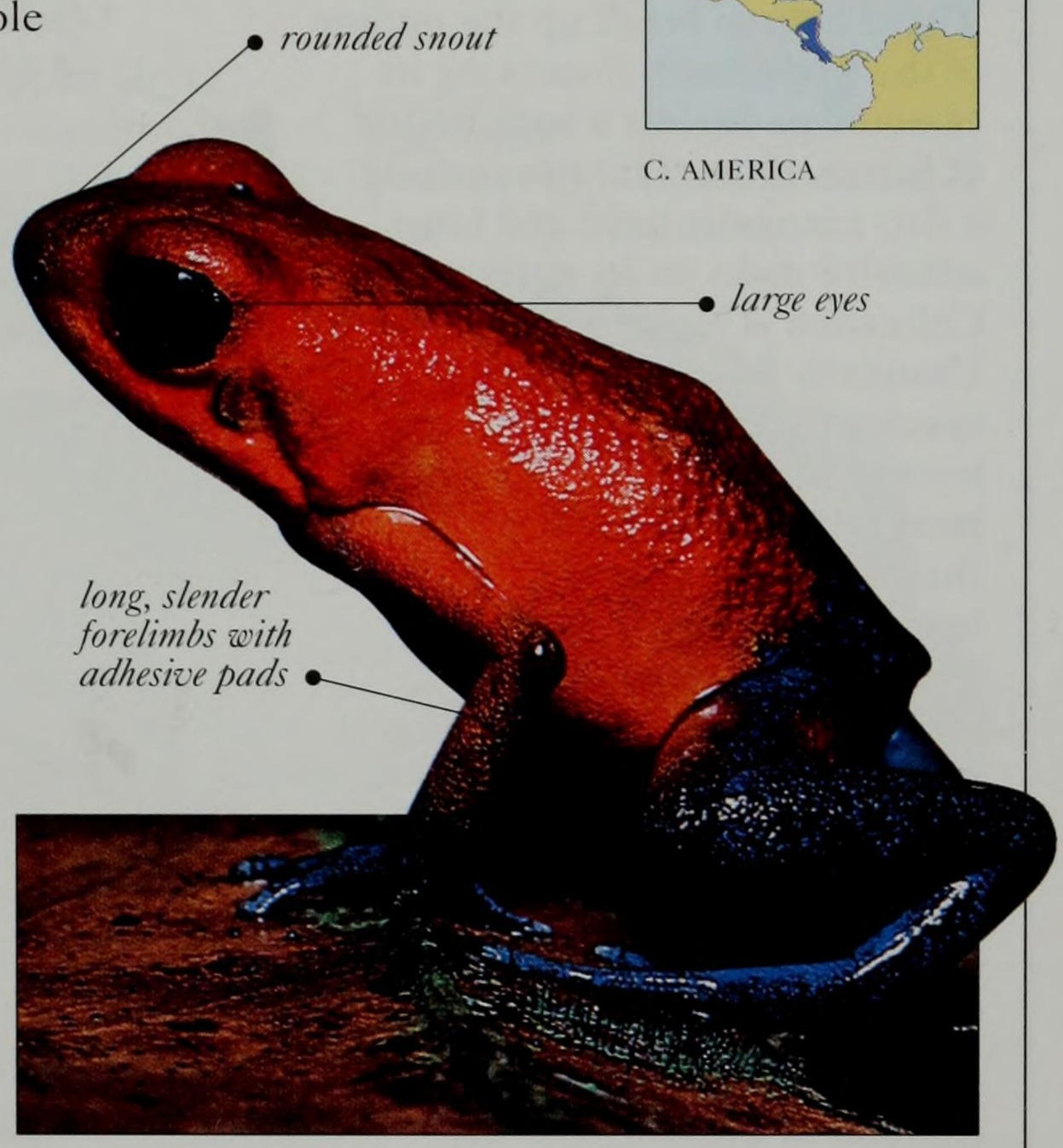
C. AMERICA

The coloration in this species is highly variable from one locality to another. Individuals in some areas are brilliant blue or red; in other areas, they may be brown, blue, or green. Males call loudly to attract females. Females produce clutches of only four to six eggs, which are laid in leaf-litter. When the eggs hatch, the tadpoles wriggle onto the back of the female, which carries them to water-filled tree holes and bromeliads, placing a single tadpole in each pool. The females then return to the tadpoles at frequent intervals, feeding them on unfertilized eggs. The tadpoles complete their development in approximately six weeks.

• **OCCURRENCE** Nicaragua, Costa Rica, and Panama. On vegetation in tropical forest.

• **REPRODUCTION** Lays eggs on land in the rainy season.

• **REMARK** For centuries, tribesmen have heated this frog over fires to extract the deadly poison.



Length ¾–1in (2–2.5cm)	Habit Entirely terrestrial	Activity ☼

Family DENDROBATIDAE	Species *Dendrobates tinctorius*	Status Locally common

DYEING POISON-DART FROG

The largest species of the dendrobatid frogs, the Dyeing Poison-dart Frog has a black-and-yellow-striped body and blue legs, spotted with black. A good jumper and climber, it has muscular hindlegs and adhesive disks on its toes. The female lays up to 20 eggs on a leaf; the male guards them and, when they hatch, carries the tadpoles individually to pools of water, where he leaves them.

• **OCCURRENCE** French Guiana and N.E. Brazil. In tropical rainforest.



S. AMERICA

• **REPRODUCTION** Lays eggs on land in the rainy season.



Length 1¼–2½in (3–6cm)	Habit Entirely terrestrial	Activity ☼

Family RANIDAE	Species *Ceratobatracus guentheri*	Status Rare

SOLOMON ISLAND HORNED FROG

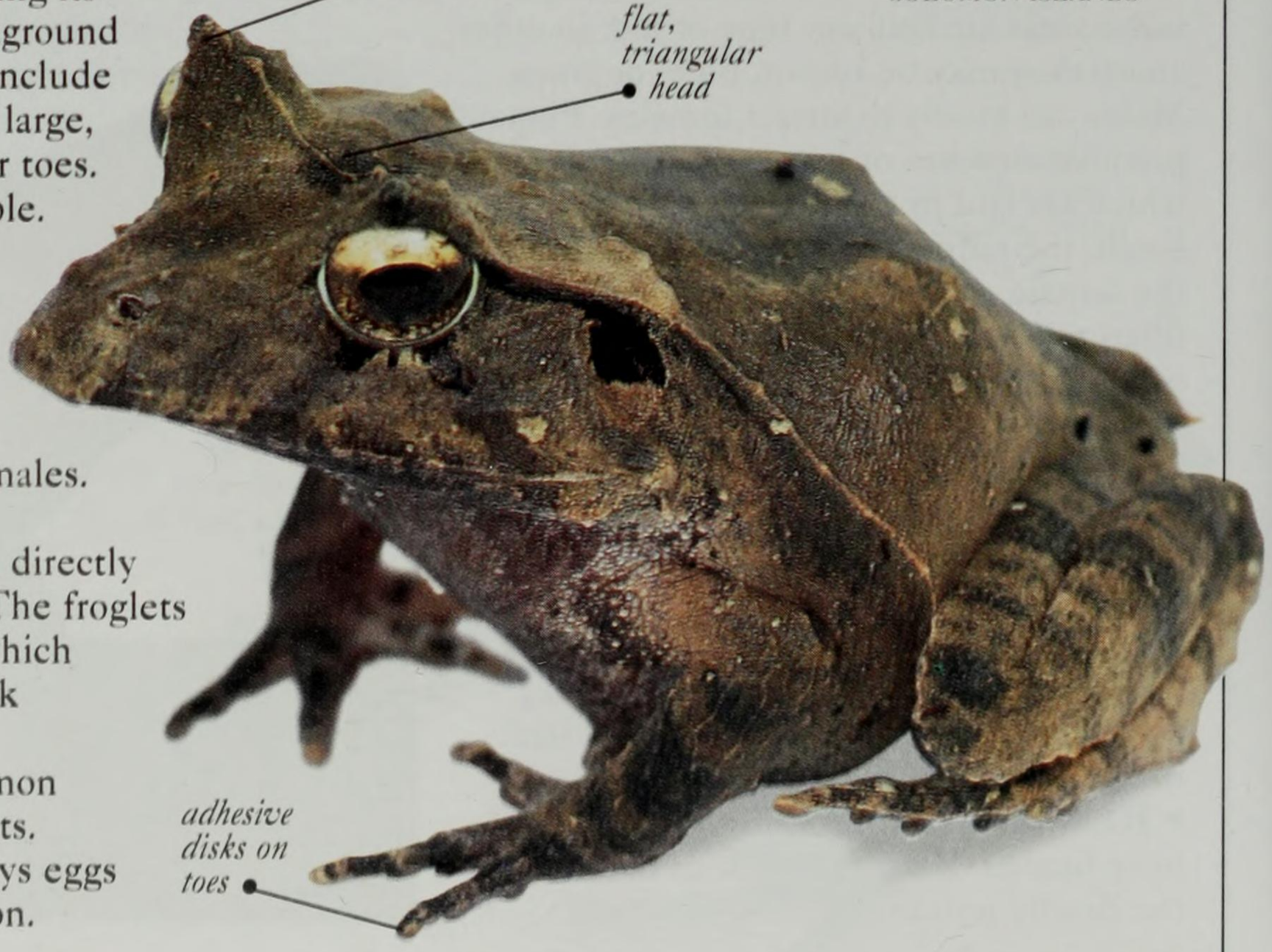
This frog's common name derives from the projections, or "horns," on its head. These help to break up the outline of the frog's head, improving its camouflage against a background of leaves. Other features include a flat, triangular head and large, adhesive disks on its outer toes. Coloration is highly variable. Unusually for a frog, this species has tusks in its lower jaw; these are bony projections rather than true teeth, and are larger in males than in females. The female lays clumps of large eggs, which hatch directly into froglets, in streams. The froglets have folds in their skin, which enhance absorption of yolk from eggs.

• **OCCURRENCE** Solomon Islands. In wooded habitats.

• **REPRODUCTION** Lays eggs in water in the rainy season.



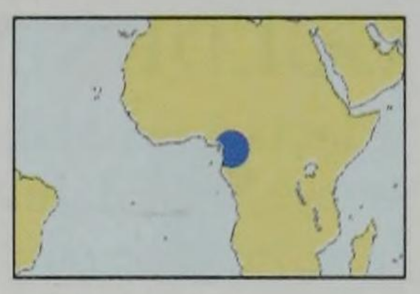
SOLOMON ISLANDS



Length 2–3¼in (5–8cm)	Habit Mostly terrestrial	Activity ☾

Family RANIDAE	Species *Conraua goliath*	Status Rare

GOLIATH FROG



AFRICA

The largest frog in the world, the Goliath Frog is well adapted for its aquatic lifestyle. A good swimmer and diver, it has smooth, slippery skin, very powerful hindlegs, and long, webbed toes. It is blue-gray to green, with brown markings. This species rarely comes far out of water and, if disturbed on land, it immediately jumps toward the nearest stream. It feeds mostly on other vertebrates. Unusually for frogs and toads, the male is larger than the female and also has larger eardrums.

• OCCURRENCE
Cameroon and Equatorial Guinea. Along streams in jungle.

• REPRODUCTION
Lays eggs in the rainy season (location unknown).

powerful hindlegs for swimming

long, webbed toes



Length 4–16in (10–40cm)	Habit Mostly aquatic	Activity ☾

Family RANIDAE	Species *Hylarana albolabris*	Status Locally common

WHITE-LIPPED RIVER FROG



AFRICA

A good climber, the green-and-black White-lipped River Frog has large adhesive pads on its toes. It has a pointed head, a white upper lip, and prominent folds of skin down each side of its back. The very visible eardrum is larger in the male than it is in the female, which is unusual for frogs. In the breeding season, males have large glands on the upper arm, which probably help them maintain a good grip on females in running water. Eggs are laid in clumps in streams.

• OCCURRENCE
W. and C. Africa. In rainforest and woodland.

• REPRODUCTION
Lays eggs in water in summer.

prominent folds in skin on back

large eyes with round pupils



Length 2½–4in (6–10cm)	Habit Mostly terrestrial	Activity ☾

Family RANIDAE	Species *Mantella auriantiaca*	Status Endangered

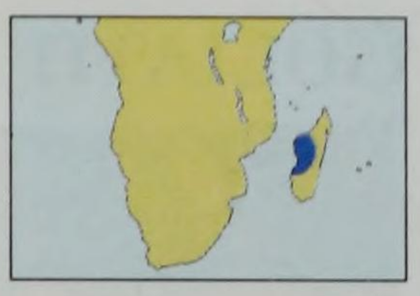
GOLDEN MANTELLA

The Golden Mantella varies in color from yellow, through orange, to red. Juveniles are green and black. It is a poisonous frog from the rainforests of Madagascar, and is active by day. It is believed that, unusually for frogs, fertilization is internal. Males call to the females from the ground, rather than from vegetation or from the water. The eggs are laid in moist leaf-litter, and the tadpoles are washed into small pools by rain.

• **OCCURRENCE** W. central Madagascar. In sunny patches in rainforest.

• **REPRODUCTION** Lays eggs on land in the rainy season.

• **REMARK** These frogs are endangered because of destruction of their forest habitat. There is also serious concern about trade to developed countries, but this is being controlled.



MADAGASCAR



Length ¾–1¼in (2–3cm)	Habit Entirely terrestrial	Activity ☼

Family RANIDAE	Species *Mantella viridis*	Status Rare

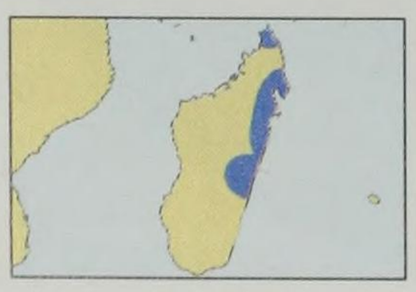
GREEN MANTELLA

The Green Mantella is yellow or pale green on the back and sides, with a patch of black on the side of its head and the front part of its body. It has a white stripe along the upper lip and has adhesive disks on the toes of both fore- and hindlimbs. The male's call consists of a series of clicks. Mating takes place on land and the eggs are laid close to streams, in which its tadpoles develop.

• **OCCURRENCE** N. and E. Madagascar. In tropical forest.

• **REPRODUCTION** Lays eggs on land in the rainy season.

• **REMARK** This species is threatened by habitat destruction and collection for the pet trade.



MADAGASCAR



Length ¾–1¼in (2–3cm)	Habit Entirely terrestrial	Activity ☼

Family RANIDAE	Species *Pyxicephalus adspersus*	Status Locally common

AFRICAN BULLFROG



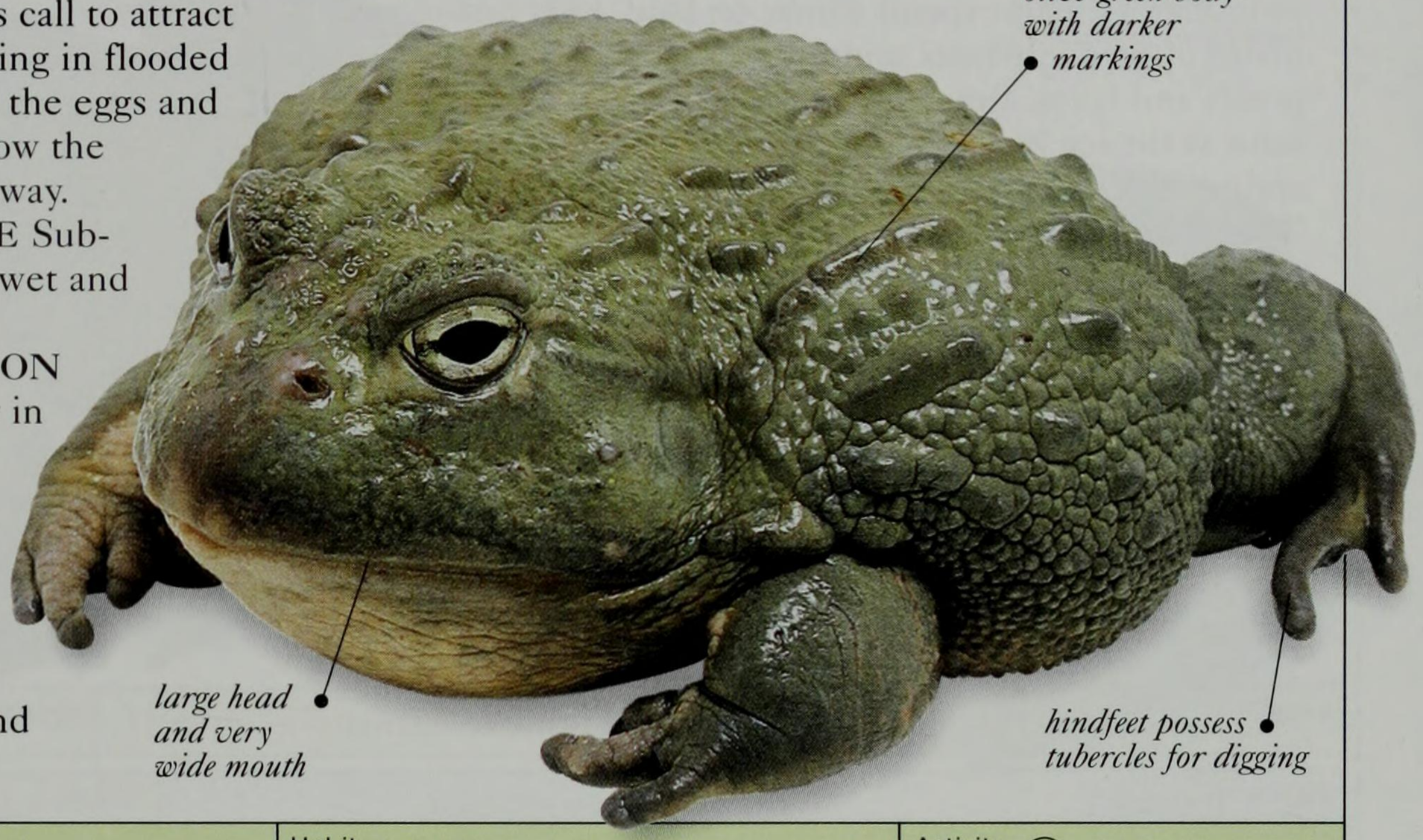
AFRICA

A large and aggressive species, the African Bullfrog has a massive body, wide head, large mouth, and muscular hindlegs. The coloration is olive-green, with dark green, brown, or black markings along ridges in its skin. Males are larger than females. Bullfrogs spend up to ten months a year underground, encased in a cocoon that prevents them from drying out. They have a hard tubercle on the hindfeet, which helps them dig into the soil. Males call to attract females. After mating in flooded pools, males guard the eggs and dig channels to allow the tadpoles to swim away.

• **OCCURRENCE** Sub-Saharan Africa. In wet and dry savanna.

• **REPRODUCTION** Lays eggs in water in the rainy season.

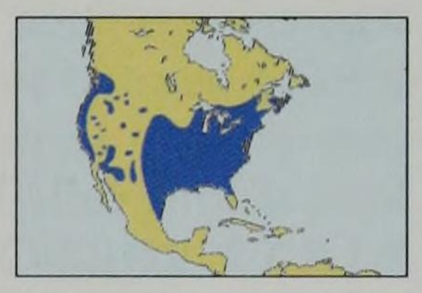
• **REMARK** In dry localities with only occasional rain, these bullfrogs may remain underground for several years.



Length 3¼–9in (8–23cm)	Habit Mostly terrestrial	Activity ◯

Family RANIDAE	Species *Rana catesbeiana*	Status Locally common

NORTH AMERICAN BULLFROG



N. AMERICA

The largest frog in North America, this species is olive-green above, with darker markings. It is often pale green on the head, and the legs are banded and blotched with brown or black. A voracious predator, it feeds on a variety of prey, including small mammals, reptiles, and other frogs. In the breeding season, males defend spawn sites and females lay thousands of eggs. Tadpoles may take up to four years to develop.

• **OCCURRENCE** C. and E. US. (Introduced to W. US and elsewhere.) In large ponds and lakes.

• **REPRODUCTION** Lays eggs in water in spring and summer.

• **REMARK** This bullfrog has been introduced to many parts of the world, where it has had a very destructive effect on native frog species.



Length 3½–8in (9–20cm)	Habit Mostly aquatic	Activity ☾ ☼

Family RANIDAE	Species *Rana dalmatina*	Status Locally common

AGILE FROG

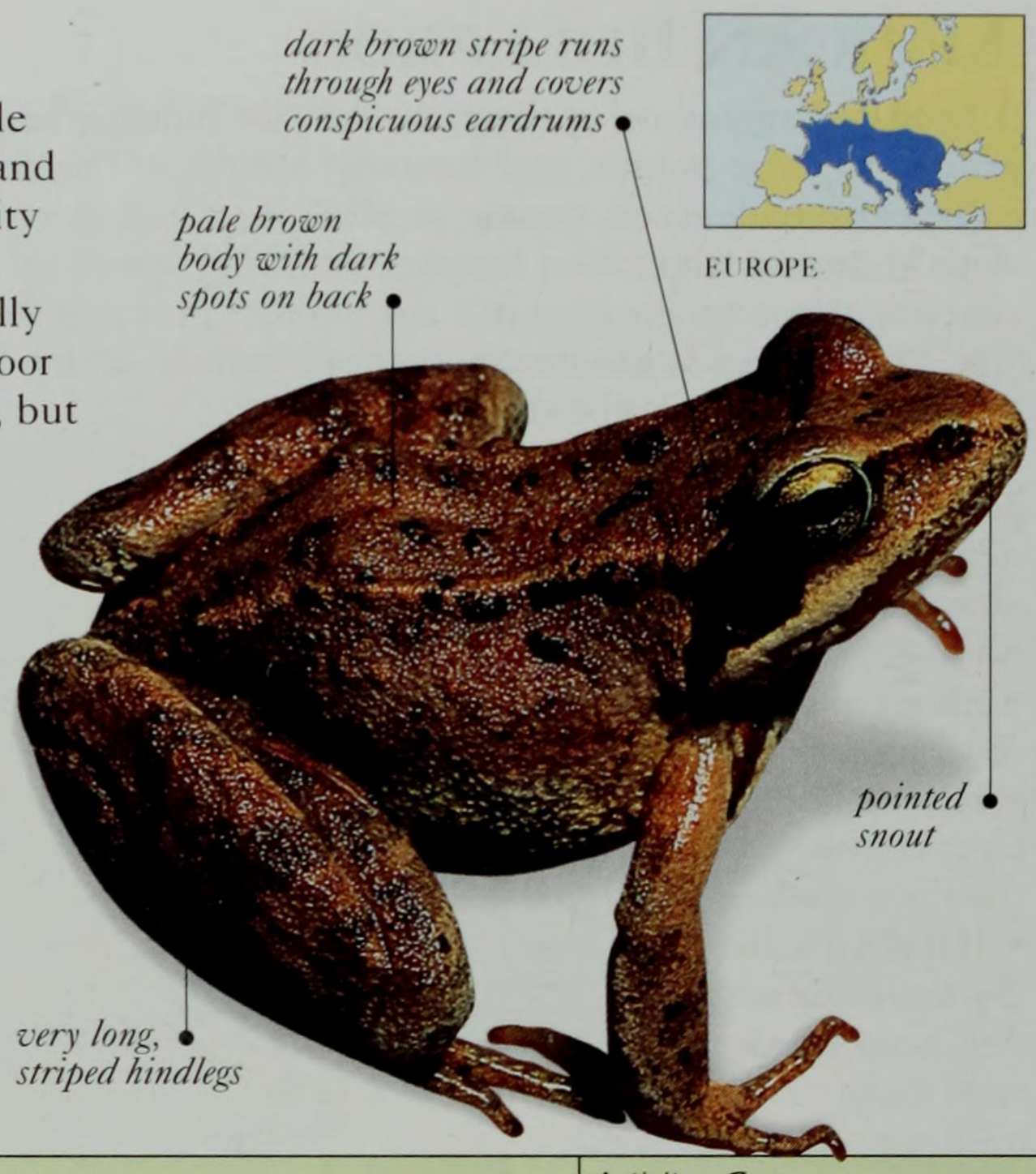
With its long, powerful hindlegs, this pale brown frog, with dark spots on the back and stripes on the legs, has a remarkable ability to jump, hence its common name. When disturbed, it will jump high and far, usually toward water, although it is a relatively poor swimmer. Females spend winter on land, but males often overwinter under ice in ponds and lakes. Breeding begins as soon as the ice begins to melt in the spring. Eggs are laid in large clumps. Tadpoles take three to four months to reach adulthood.

• **OCCURRENCE** Mainly C. and S. Europe, with a few isolated populations in N. Europe. In open woodland and swampy meadows.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Moor Frog (*Rana arvalis*).

EUROPE



Length 2–3½in (5–9cm)	Habit Mostly terrestrial	Activity ☾

Family RANIDAE	Species *Rana ridibunda*	Status Locally common

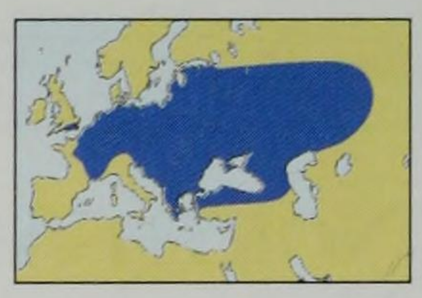
LAKE FROG

Europe's largest frog, this is also known as the Marsh Frog in the UK, where it has been introduced. It is green or brown, with darker spots, and it has a pointed snout. This species often basks in the sun beside water, into which it leaps when disturbed. The male has a very variable and loud mating call. The female lays up to 12,000 eggs.

• **OCCURRENCE** Europe. In lakes, ponds, ditches, and streams.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Edible Frog (*Rana esculenta* – a hybrid between the Lake Frog and the Pool Frog), Pool Frog (*Rana lessonae*).

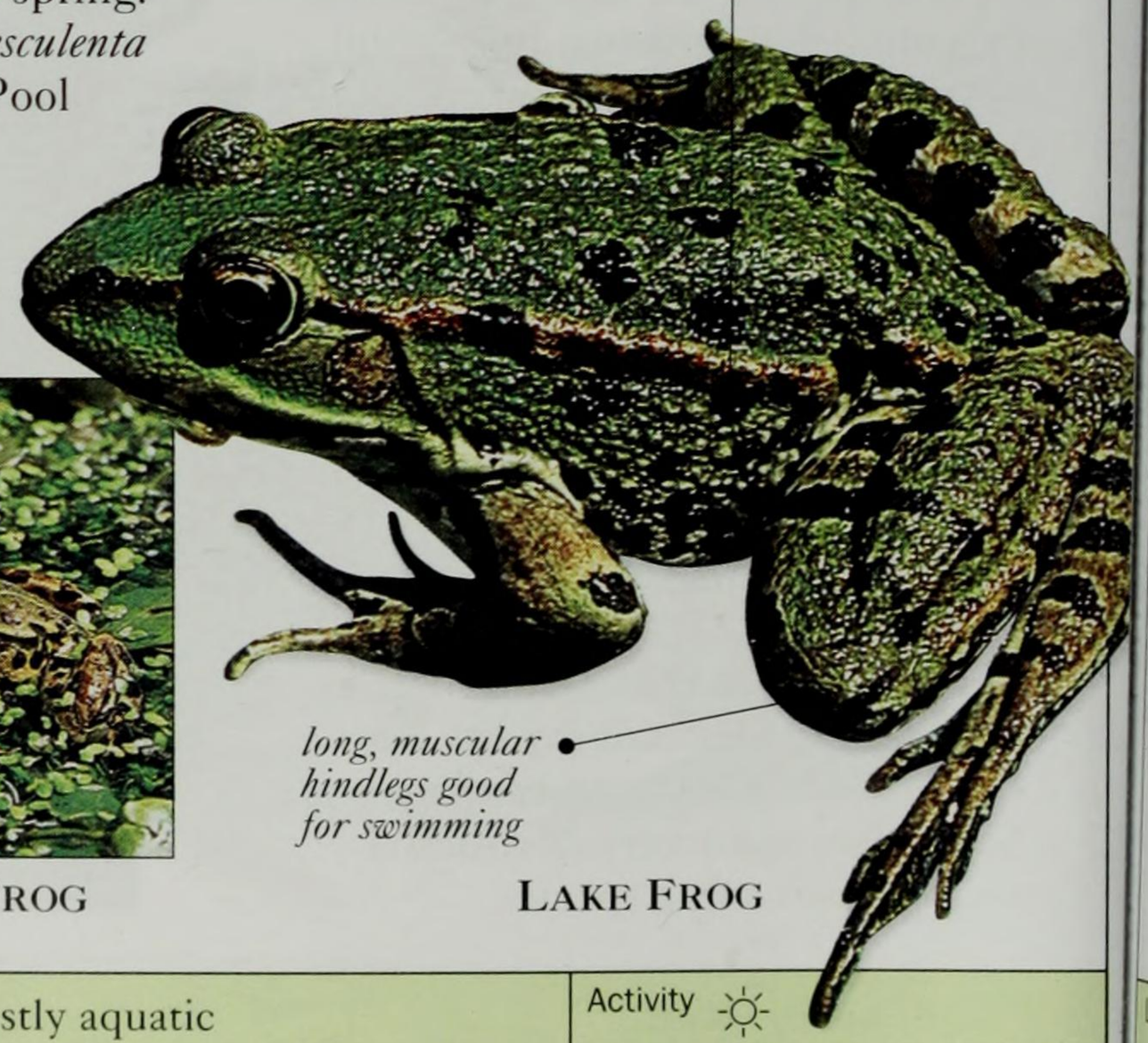


EUROPE



EDIBLE FROG

POOL FROG



LAKE FROG

Length 3½–6in (9–15cm)	Habit Mostly aquatic	Activity ☼

Family RANIDAE	Species *Rana temporaria*	Status Locally common

EUROPEAN COMMON FROG

Highly variable in color, the European Common Frog is usually green or brown, but occasionally red or yellow individuals are seen. Some specimens have black spots. Also known as the Grass Frog, it lives most of its life on land, but migrates to ponds in early spring to breed. Breeding is usually completed within two or three days. Some males spend the winter in ponds and may die if their pond freezes over. Breeding males have much thicker forelimbs than females and also prominent dark nuptial pads on their thumbs, which ensure a firm grasp on the female during mating. Females deposit eggs in clumps in communal spawn sites in ponds, ditches, and canals.

• **OCCURRENCE** Europe. In a wide variety of damp habitats.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Moor Frog (*Rana arvalis*).



EUROPE



Length 2–4in (5–10cm)	Habit Mostly terrestrial	Activity ☾

Family RANIDAE	Species *Rana utricularia*	Status Locally common

SOUTHERN LEOPARD FROG

An athletic jumper, the Southern Leopard Frog has extremely long, muscular hindlegs. When attacked by a predator, such as a heron or a raccoon, it flees toward water in a series of zigzag leaps. If cornered, it squirts a distasteful and foul-smelling liquid toward its enemy. It is usually bright green, with large black spots and a prominent ridge, often yellow, running down each side of the back. The male's mating call consists of a variety of croaks and chuckles. Eggs are laid in clumps in communal spawn sites.

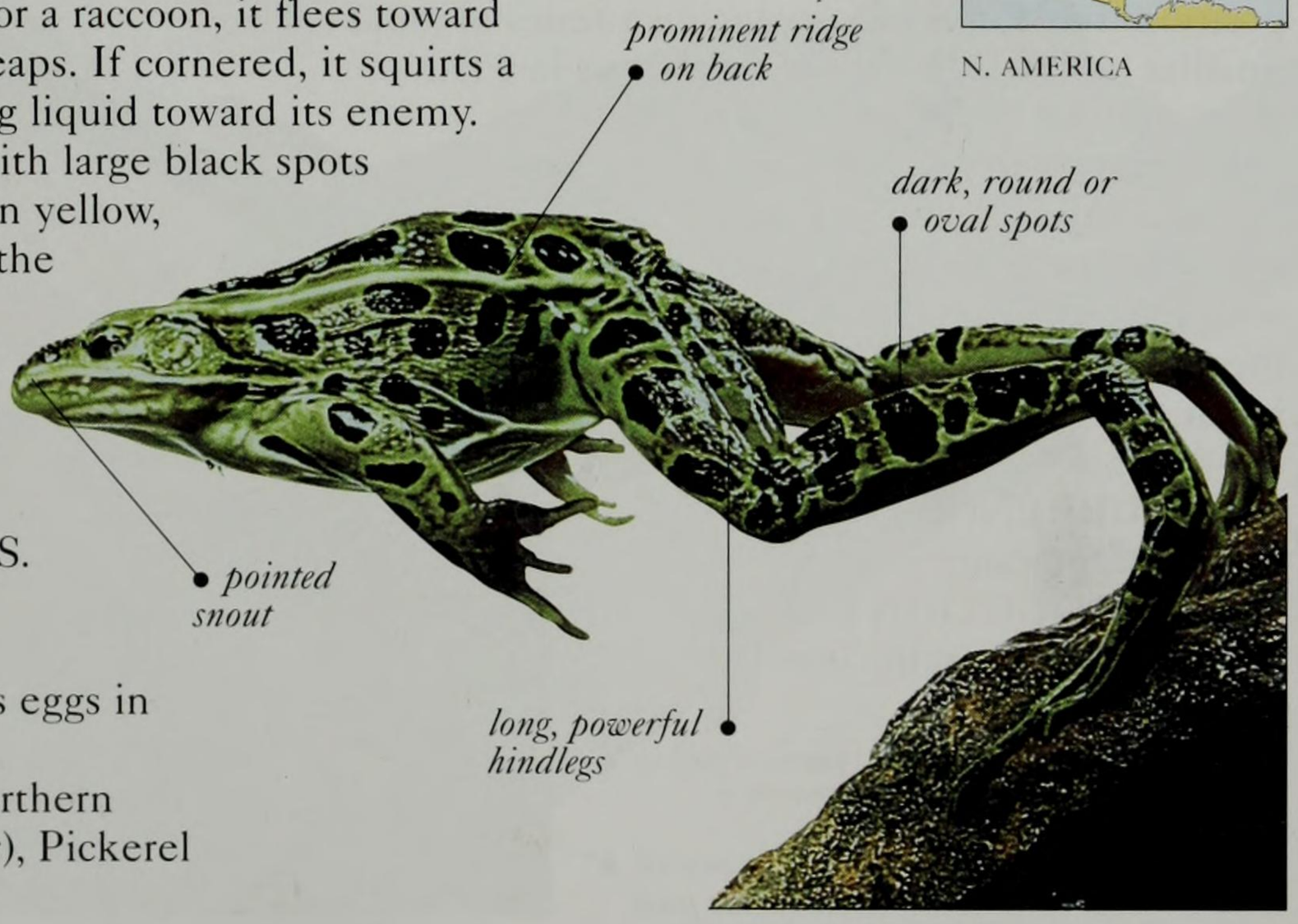
• **OCCURRENCE** S.E. US. In meadow ponds, lakes, and marshes.

• **REPRODUCTION** Lays eggs in water in spring.

• **SIMILAR SPECIES** Northern Leopard Frog (*Rana pipiens*), Pickerel Frog (*R. palustris*).



N. AMERICA



Length 2–4¾in (5–12cm)	Habit Mostly aquatic	Activity ☾

Family RANIDAE	Species *Hemisus marmoratus*	Status Locally common

MOTTLED SHOVEL-NOSED FROG



AFRICA

This burrowing species, which spends most of its life underground, has a squat, slightly bloated body, powerful limbs, and a tiny, pointed head with small eyes and a sharp, toughened snout. The coloration is yellow or gray, with brown or black mottled patterning. Males call to females from the banks of pools, making a buzzing sound. The eggs are laid in an underground chamber close to the pool. When they hatch, the female digs a tunnel to release the tadpoles into the pond.

• OCCURRENCE S.E. Africa. In savanna and dry scrub.

• REPRODUCTION Lays eggs on land in the rainy season.

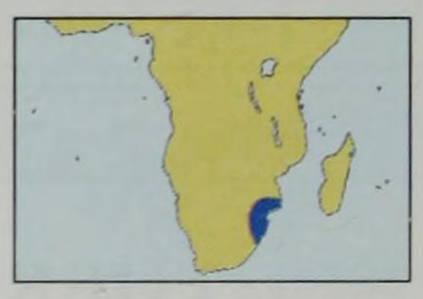
• REMARK Unusually for a burrowing frog, this species digs into the soil head-first (most use their hindfeet to dig backward).



Length 1¼–1½in (3–4cm)	Habit Mostly terrestrial	Activity ☾

Family HYPEROLIIDAE	Species *Afrixalus fornasinii*	Status Locally common

GREATER LEAF-FOLDING FROG



AFRICA

With its long, slender limbs and adhesive disks on its toes, the Greater Leaf-folding Frog is well equipped for its life in vegetation. Its coloration is highly variable, from yellowish brown to yellowish green, but this species is distinguished by its dark vertebral stripe, bordered by a paler stripe on either side. Males call from elevated positions in vegetation, producing a series of rapid clicks. Smaller males often do not call but sit in a flat posture close to calling males to try to intercept a female. Eggs are laid in small clutches on a leaf, which is then folded and glued with a secretion produced by the female. When the eggs hatch, the tadpoles fall into the water.

• OCCURRENCE S.E. Africa. In low vegetation.

• REPRODUCTION Lays eggs over water in the rainy season.



Length 1¼–1½in (3–4cm)	Habit Entirely terrestrial	Activity ☾

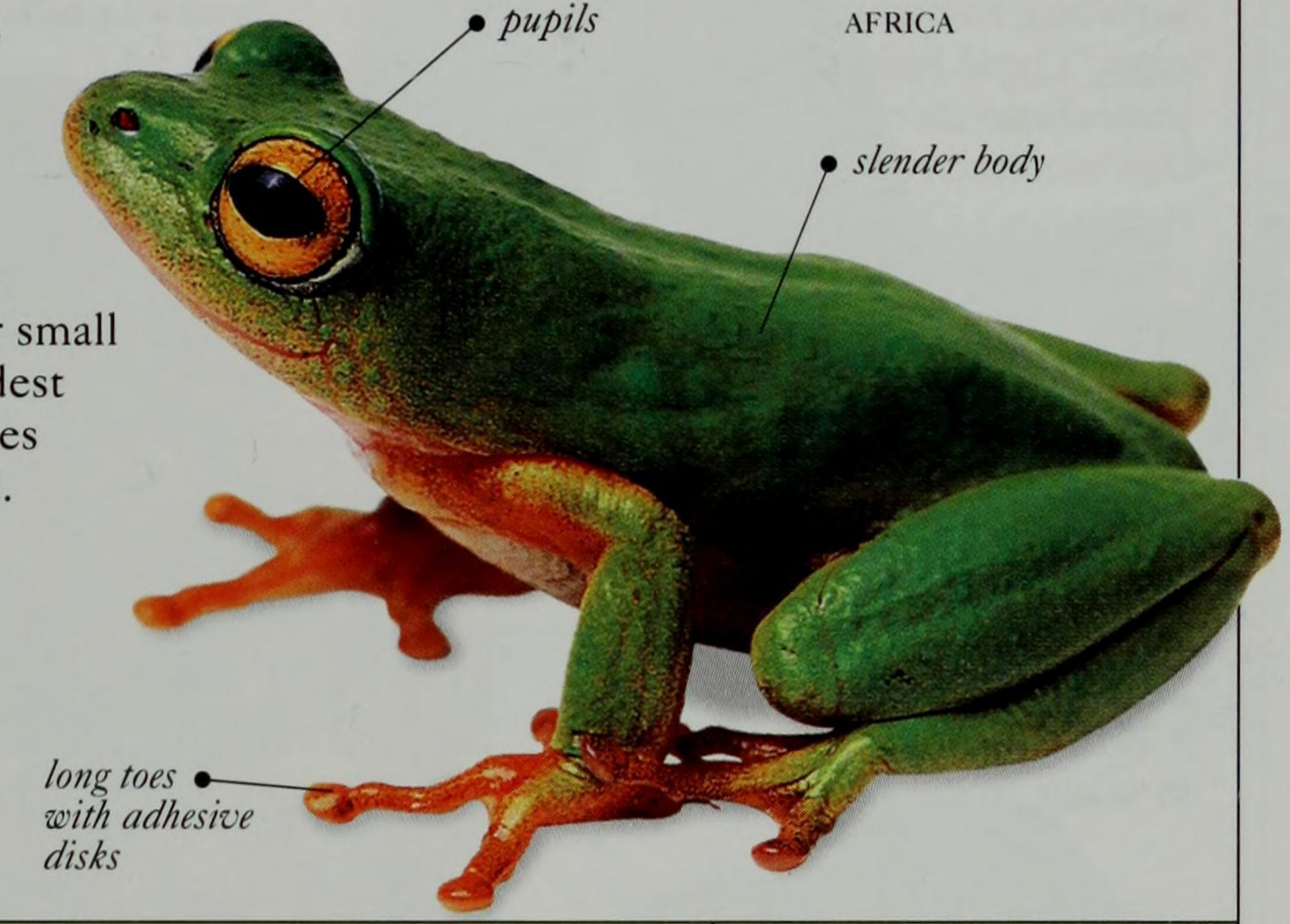
Family HYPEROLIIDAE	Species *Hyperolius tuberilinguis*	Status Locally common

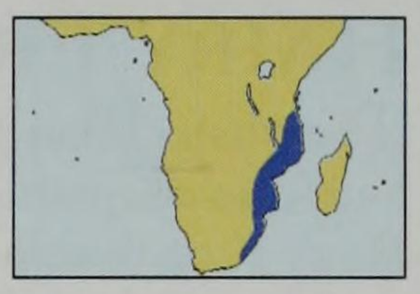
TINKER REED FROG

A very agile climber and jumper, the Tinker Reed Frog has a slim body, long, slender hindlimbs, and adhesive disks on its toes. The coloration is bright green, yellow, or brown, with no patterning on the skin, and the inner surfaces of the legs are bright orange or yellow (this flash coloration is visible only when the frog leaps). The large eyes are yellow or orange, with horizontal pupils. Despite their small size, reed frogs have among the loudest of frog calls. Choruses of calling males frequently number several thousand. Eggs are laid in a mass of jelly on vegetation overhanging a swamp, pond, or lake.

• **OCCURRENCE** Africa. In lowland habitats in vegetation.

• **REPRODUCTION** Lays eggs above water in spring.





AFRICA

Length 1¼–1¾in (3–4.5cm)	Habit Mostly terrestrial	Activity ☾

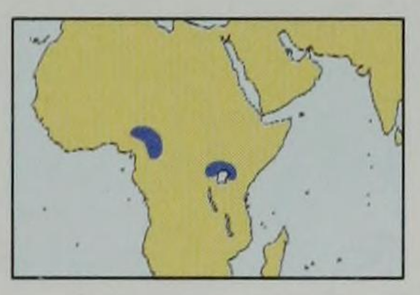
Family HYPEROLIIDAE	Species *Leptopelis modestus*	Status Locally common

AFRICAN TREEFROG

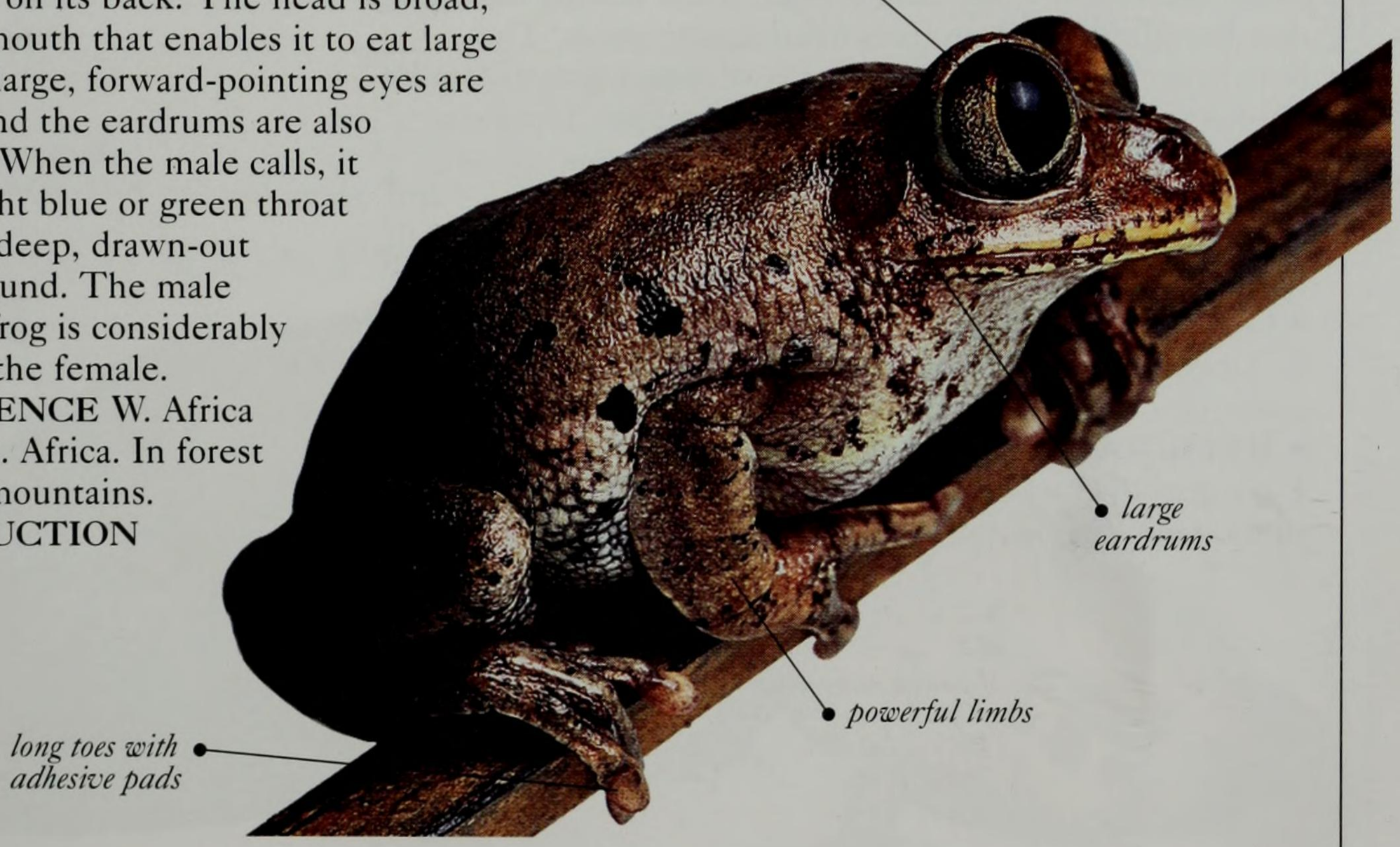
The African Treefrog is an agile species, with long, slender limbs and large adhesive disks at the end of the toes on all four limbs. It is gray or pale brown in color, with a darker, hourglass-shaped patch on its back. The head is broad, with a large mouth that enables it to eat large insects. The large, forward-pointing eyes are distinctive, and the eardrums are also conspicuous. When the male calls, it reveals a bright blue or green throat and makes a deep, drawn-out "clacking" sound. The male African Treefrog is considerably smaller than the female.

• **OCCURRENCE** W. Africa and central E. Africa. In forest on hills and mountains.

• **REPRODUCTION** Unknown.



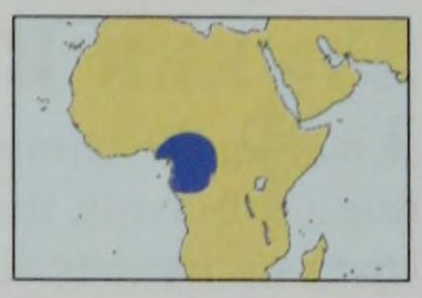
AFRICA



Length 1–1¾in (2.5–4.5cm)	Habit Mostly terrestrial	Activity ☾

Family ARTHROLEPTIDAE	Species *Trichobatrachus robustus*	Status Locally common

HAIRY FROG



AFRICA

The "hairs" that give this species its name are a unique adaptation that enables the male Hairy Frog to remain submerged without surfacing to breathe while it is caring for its eggs. These hairlike skin projections along its sides and legs increase the area of skin through which oxygen can be absorbed from the water. The Hairy Frog is a relatively large species with a huge head. The tadpoles have a suckerlike disk on the abdomen that enables them to adhere to stones.

• **OCCURRENCE** E. Nigeria, Guinea, Cameroon, and Zaire. In rainforest.

• **REPRODUCTION** Lays eggs in water in the rainy season.



Length 2¾–5in (7–13cm)	Habit Mostly terrestrial	Activity ☾

Family RHACOPHORIDAE	Species *Chiromantis xerampelina*	Status Locally common

FOAM-NEST FROG

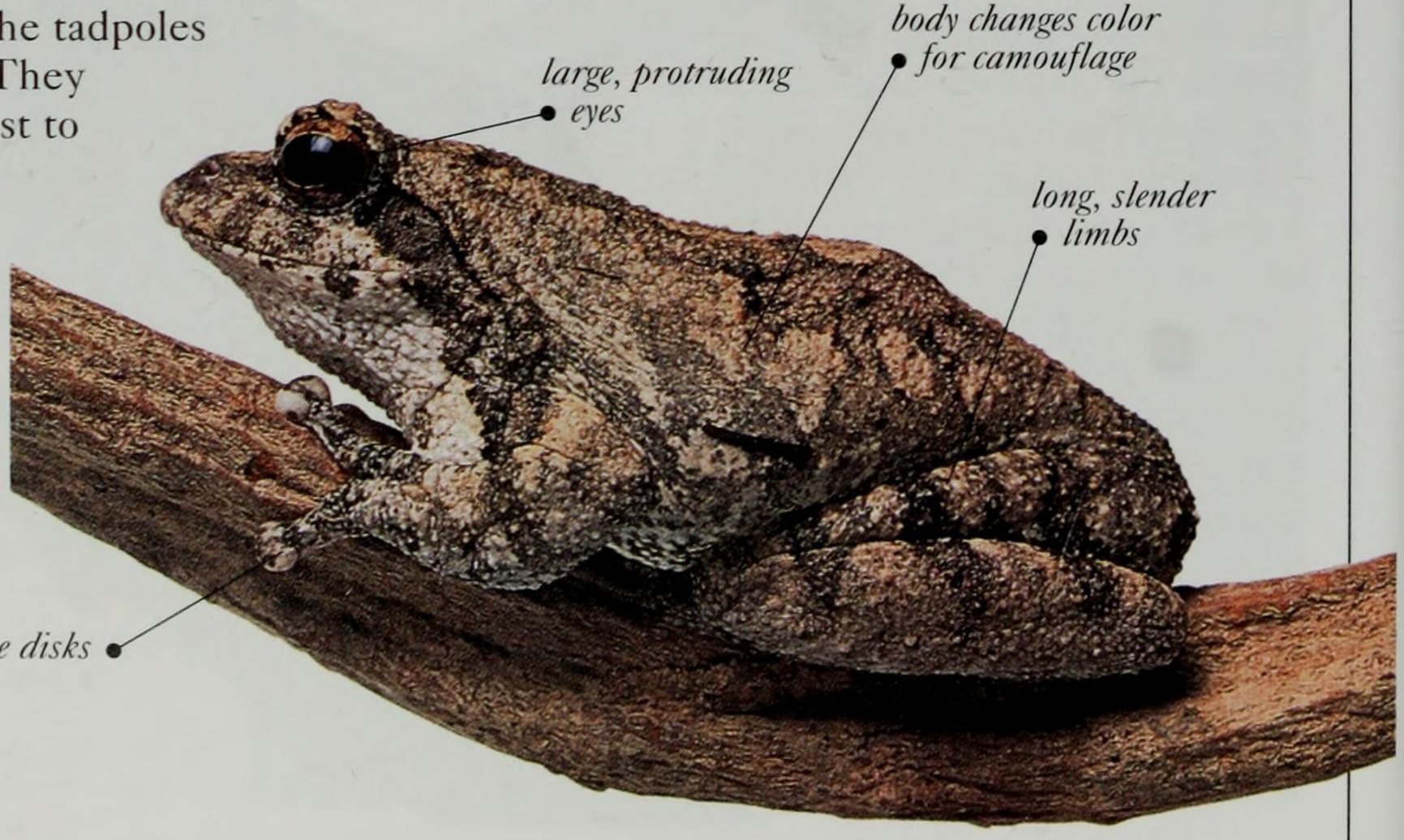


AFRICA

An excellent climber, the Foam-nest Frog has long, slender limbs and adhesive disks on its toes. It is able to change color, allowing it to be camouflaged while resting during the day. Breeding occurs in trees overhanging pools. The female produces a secretion that is whipped into a foam by her legs, with help from one or several males. The foam dries on the outside and the tadpoles develop within the nest. They then burrow out of the nest to fall into the water below.

• **OCCURRENCE** S. Africa. In wooded savanna.

• **REPRODUCTION** Lays eggs over water in the rainy season.



Length 2–3½in (5–9cm)	Habit Entirely terrestrial	Activity ☾

Family RHACOPHORIDAE	Species *Rhacophorus reinwardti*	Status Locally common

JAVAN FLYING FROG

The Javan Flying Frog gets its name from its ability to glide considerable distances when it jumps from a tree (it does not fly in the true sense). This gliding motion is achieved by the frog spreading its large, webbed toes, which act as a parachute. The limbs are long and slender, making this species an agile climber. The coloration is green, with black marks on the webbing between the toes. The female lays eggs in a foam nest over water.

• **OCCURRENCE** Malaysia, Sumatra, and Java. In woodland and forest.

• **REPRODUCTION** Lays eggs above water in the rainy season.



ASIA

Length 2–3¼in (5–8cm)	Habit Mostly terrestrial	Activity ☾

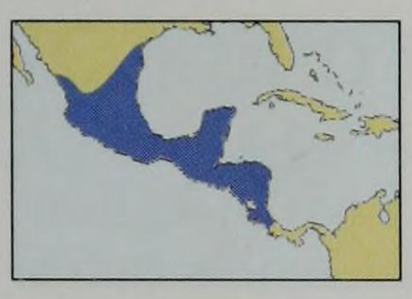
Family RHINOPHRYNIDAE	Species *Rhinophrynus dorsalis*	Status Locally common

MEXICAN BURROWING FROG

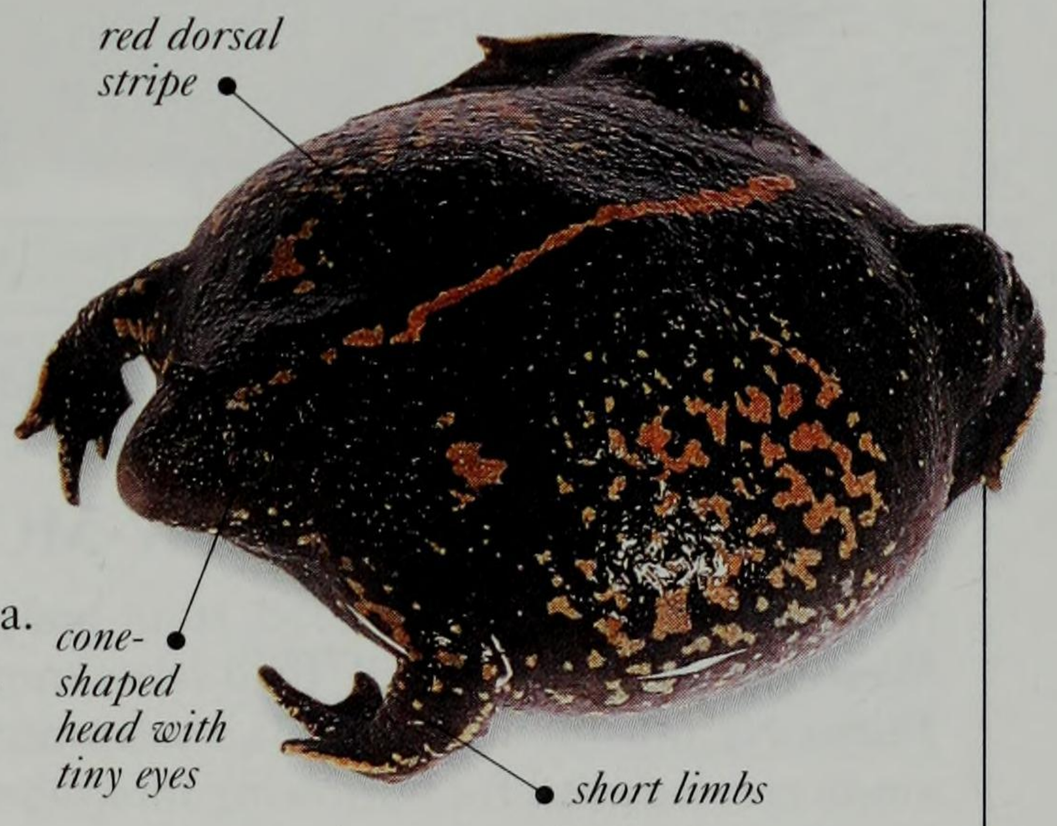
Unlike any other frog in appearance, the unique shape of this large species is adapted for life underground. The cone-shaped head and pointed, calloused snout enable it to burrow through the soil, propelled by its short but powerful legs. It emerges onto the surface only after rain, moving clumsily to ephemeral ponds to breed. Its prey consists of termites and ants.

• **OCCURRENCE** Central America. In lowland forest and open habitats.

• **REPRODUCTION** Lays eggs in water in the rainy season.



C. AMERICA



Length 2½–3¼in (6–8cm)	Habit Mostly terrestrial	Activity ☾

Family MICROHYLIDAE	Species *Breviceps adspersus*	Status Locally common

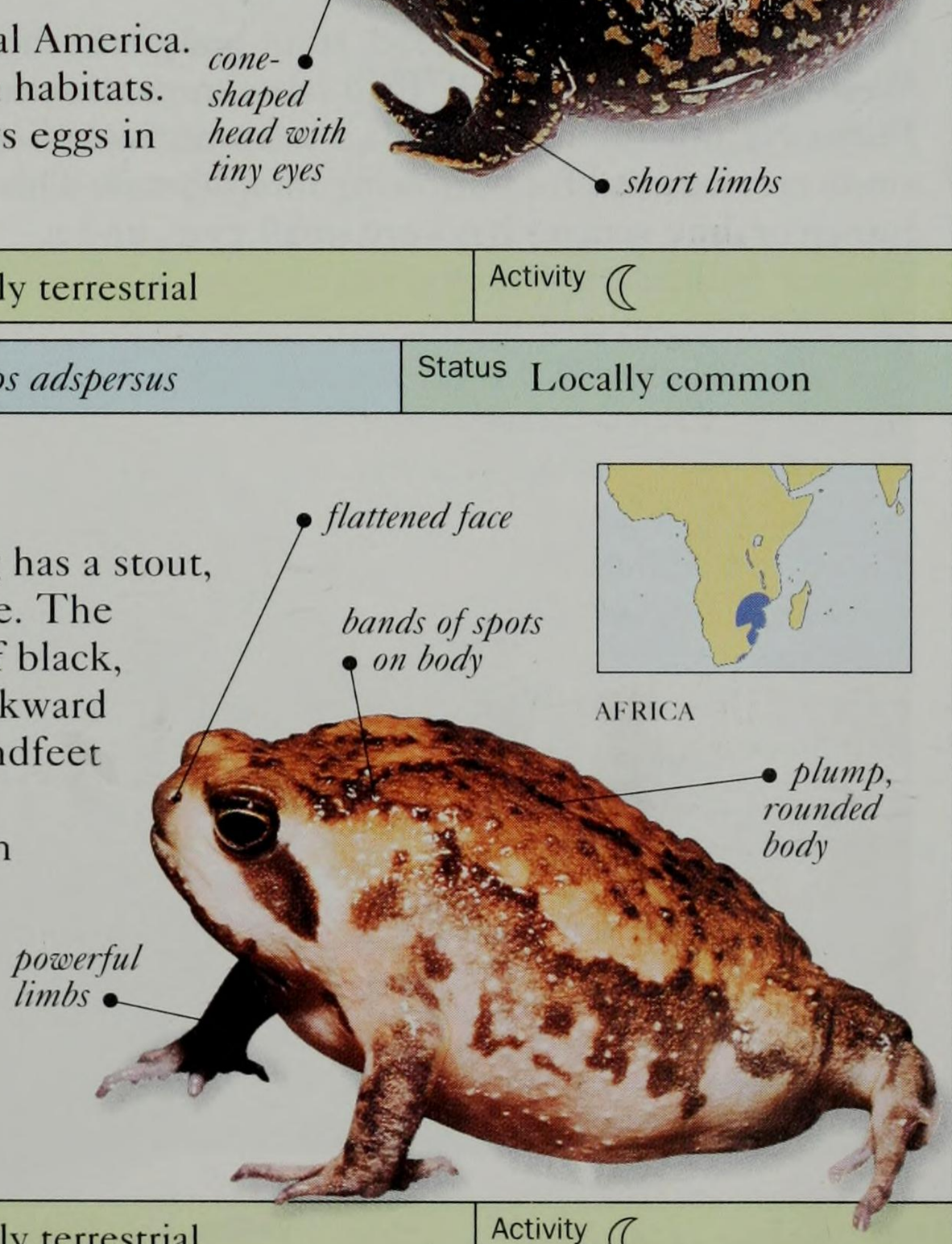
BUSHVELD RAIN FROG

A burrowing species, the Bushveld Rain Frog has a stout, globular body, short limbs, and a flattened face. The coloration is pale or dark brown, with bands of black, yellow, and orange spots. This frog moves backward when digging, using horny tubercles on its hindfeet to move the soil. When disturbed, it can inflate its body with air, lodging itself firmly in its burrow. It emerges only on rainy nights to feed on termites and ants.

• **OCCURRENCE** South Africa and Zimbabwe. In wooded areas with sandy soils.

• **REPRODUCTION** Lays eggs on land in the rainy season.

AFRICA

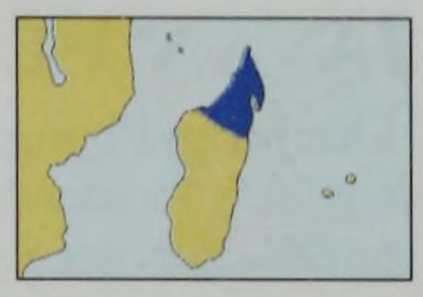


Length 1¼–2½in (3–6cm)	Habit Mostly terrestrial	Activity ☾

Family MICROHYLIDAE	Species *Dyscophus antongilli*	Status Endangered

TOMATO FROG

The plump shape and vivid red color give this flat-headed frog its common name. When handled, the Tomato Frog produces a very sticky skin secretion, a protection against predators. A ground-living animal, it spends much of its time buried in the soil, coming out at night to feed on insects. It breeds in pools and ditches, after heavy rain. The Tomato Frog is endangered in the wild because of habitat destruction, but it is widely bred in captivity. Captive-bred animals are rarely as brightly colored as wild animals.



MADAGASCAR

• OCCURRENCE

N.W. Madagascar. In lowland habitats.

• REPRODUCTION

Lays eggs in water in the rainy season.

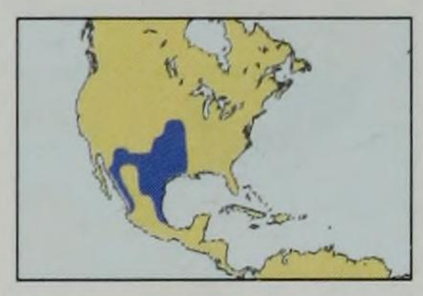


Length 3¼–4¾in (8–12cm)	Habit Mostly terrestrial	Activity ☾

Family MICROHYLIDAE	Species *Gastrophryne olivacea*	Status Locally common

WESTERN NARROW-MOUTHED TOAD

With its narrow, pointed head, stout body, and short legs, the Western Narrow-mouthed Toad (also known as the Great Plains Narrow-mouthed Toad) is adapted for hiding in small crevices and for burrowing into the soil. This brown or grey species has very small eyes, and it has a characteristic fold of skin across the top of its head. It feeds on ants and is often found buried in sand, soil, or rotting wood near an ants' nest. After heavy rain, large numbers may gather around ephemeral pools to breed. The eggs hatch quickly and tadpole development is very rapid.



N. AMERICA

• OCCURRENCE

S.W. US. In semiarid habitats.

• REPRODUCTION

Lays eggs in water in spring and summer.



Length ¾–1½in (2–4cm)	Habit Mostly terrestrial	Activity ☾

Family MICROHYLIDAE	Species *Kaloula pulchra*	Status Locally common

MALAYSIAN NARROW-MOUTHED TOAD

A burrowing species, the Malaysian Narrow-mouthed Toad has a rotund body and short limbs. It is brown to dark brown, with broad, beige or pink stripes along its body. When mating, the male glues himself to the female's back with secretions from glands on his abdomen.

• **OCCURRENCE** India and S.W. Asia. In a wide variety of habitats with loose soil, including farmland and urban areas.

• **REPRODUCTION** Lays eggs in water in the rainy season.



ASIA



Length 2–3in (5–7.5cm)	Habit Mostly terrestrial	Activity ☾

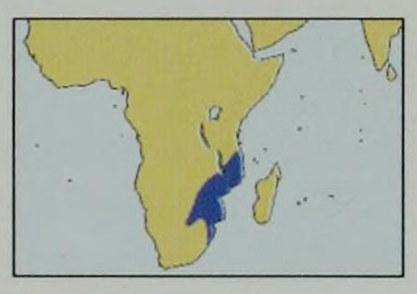
Family MICROHYLIDAE	Species *Phrynomantis bifasciatus*	Status Locally common

BANDED RUBBER FROG

A creature that runs or walks, the Banded Rubber Frog has small limbs and a long, relatively flat body. The striking red or pink stripes, blotches, or spots on its smooth black skin are a warning to potential enemies. In defense, it raises itself up on its legs and inflates its body while producing a toxic skin secretion. Individuals may change color as they mature (the black may turn to gray, the red to pink or almost white). Breeding occurs in ponds after rain. Males produce a trill-like call from the pond edge. Eggs are laid in a clump attached to plants.

• **OCCURRENCE** S. and E. Africa. In savanna.

• **REPRODUCTION** Lays eggs in water in spring.



AFRICA



Length 1½–2½in (4–6cm)	Habit Mostly terrestrial	Activity ☾

GLOSSARY

Some of the definitions below have been simplified and apply only to the use of the terms in the study of reptiles and amphibians. Words printed in **bold** type are defined elsewhere in the glossary.

• ALLIGATOR
Subtropical **crocodilian**, differing from a **crocodile** in having a broader snout.
• AMPHIBIAN
Cold-blooded vertebrate, typically living on land but breeding in water.
• AMPHISBAENIAN
Wormlike, **burrowing reptile** with a long, slender body, short tail, and **scales** arranged in rings (also known as a worm-lizard).
• ARBOREAL
Adapted for living in trees.
• AUTOTOMIZATION
See **Caudal autotomy**.
• BARBEL
Long, fleshy projection or **tubercle**, usually under the chin of a **turtle** or **tortoise**.
• BONY PLATE
Plate that strengthens the tough, leathery skin of a **crocodilian**.
• BRILLES
Immovable, transparent coverings of the eye, characteristic of all **snakes** and some **lizards** (also known as "spectacles").
• CAECILIAN
Earthwormlike **amphibian** with a long body, often with rings around it, no limbs, and virtually no tail.
• CAIMAN
South American relative of the **alligator**.
• CARAPACE
Upper side of a **turtle** or **tortoise shell**.
• CASQUE
Raised adornment on the head of a **lizard**, usually on the rear.
• CAUDAL AUTOTOMY
Process in which a **lizard** or other animal sheds its tail, to enable it to escape when attacked (also known as autotomization).
• CHELONIAN
Member of a group of **reptiles** that includes **turtles** and **tortoises**, distinguished by a protective **shell**.
• CLOACA
Genital and excretory opening.
• CLOACAL SPUR
Remnant of the pelvic girdle or hindlimb that remains as a **spur** or claw in boas and pythons, and is used by the male for stroking the female in courtship.
• CLUTCH
Group of eggs from one female.
• COLLAR
Narrow band of pigment that extends across the nape of the neck.
• CONSTRICTION
Method of killing used by many nonvenomous **snakes** involving coiling around the prey and tightening the coils until the prey suffocates.
• COSTAL GROOVES
Parallel, vertical grooves on the sides of some **salamanders**, **newts**, and their **larvae**.
• CREST
Raised ridge of skin that is present on the back and tail of some **lizards** and that develops in some male **newts** in the breeding season.
• CROCODILE
Tropical **crocodilian**, differing from an **alligator** in having a narrower snout.
• CROCODILIAN
Generic term for all **alligators**, **caimans**, **crocodiles**, and **gharials**, characterized by a streamlined body; long tail; thick, leathery skin, strengthened by **bony plates**; and a usually narrow snout.
• CROSS-BAND OR -BAR
Narrow marking that passes over the back of the body but does not meet on the underside.
• CRYPTIC PATTERNING
Patterning or coloration that breaks up the outline of an animal or helps it blend into its surroundings.
• DEWLAP
Large flap under a **lizard's** throat, sometimes used for **display**.
• DISPLAY
Pattern of behavior in which a **reptile** or **amphibian** attracts attention while it is courting or defending its territory.
• DIURNAL
Active mainly during the day.
• DORSAL
Pertaining to the back.
• EPHEMERAL POOL OR POND
Pool or pond that usually dries up in the course of a year.
• FANG
Long, hollow or grooved tooth of a venomous **snake** through which venom is injected.
• FROG
Amphibian characterized by the absence of a tail in the adult and, typically, hindlimbs that are much larger than the frontlimbs.
• FRONT-FANGED SNAKE
Venomous **snake** that has **fangs** in the front of the upper jaw.
• GHARIAL
Asian, fish-eating **crocodilian** with a very narrow snout.
• HATCHLING
Animal that has just emerged from an egg.
• HEAT-SENSITIVE PIT
Organ that helps certain **snakes** locate their warm-blooded prey. In boas and pythons, these border the mouth (labial pits); in pitvipers, they are between the nostril, the eye, and the mouth (loreal pits).
• IMMACULATE
Of skin, unmarked and usually white.
• INTERSTITIAL SKIN
Skin between a **snake's scales**.
• JUVENILE
Reptile that is not yet fully mature. *See also* **Hatchling**, **Subadult**.
• KEELED SCALE
Scale that has one or more ridges down the center, giving a rough, matt appearance and texture.
• LABIAL
Pertaining to the lips. *See also* **Heat-sensitive pit**.
• LARVA (pl. LARVAE)
Young form of all **amphibians**, before undergoing **metamorphosis** into the adult form (the larvae of **frogs** and **toads** are more commonly called **tadpoles**).
• LATERALLY COMPRESSED
High and narrow in cross section, rather than rounded or flattened.
• LIVE-BEARING
Of an animal that gives birth to **neonates**, rather than lays eggs.
• LIZARD
Reptile, typically with four legs, a relatively long tail, movable eyelids, and external ear openings.
• LOCALLY COMMON
Uncommon or absent over most of its range but relatively common in one or more specific localities.

• **LOREAL**
Pertaining to the area between the eye, the nostril, and the mouth. *See also* **Heat-sensitive pit**.
• **METAMORPHOSIS**
Transformation of a **larva** or **tadpole** into an adult, a process that occurs in most **amphibians**.
• **MIDVEIN**
Fine line down the head or back of a **snake** or **lizard**, usually enhancing the **cryptic patterning**.
• **NEONATE**
Newborn **snake** or **lizard** when it is the product of a live birth.
• **NEWT**
Small, semiaquatic **amphibian** with a long, slender body, long tail, short limbs, and in some species a **crest** on the male in the breeding season. Returns to water to breed.
• **NOCTURNAL**
Active mainly at night.
• **NUPTIAL PAD**
Swelling, usually dark in color and rough in texture, that develops in some male **frogs** and **toads** in the breeding season.
• **OCCIPITAL FLAP**
Movable fold of skin on the rear of a chameleon's head.
• **OCELLUS (pl. OCELLI)**
Eyelike spot with a light center that contrasts with its border.
• **OPPOSABLE THUMB**
Thumb that can be pushed tightly against any of the other digits.
• **OVERSHOT JAW**
Top jaw overhanging the lower one.
• **PAROTID GLAND**
Gland behind the back of the eye in many **amphibians**, particularly conspicuous in true **toads**. It may produce a noxious secretion.
• **PARTHENOGENETIC**
Of an all-female population or species that reproduces without sexual contact with a male.
• **PINEAL EYE**
Third eye in the forehead of **tuataras** and many **lizards** that can register light intensity and may help to regulate body temperature.
• **PLASTRON**
Flat underside of a **tortoise** or **turtle shell**.
• **POST-OCCIPITAL SCALE**
One of a pair of round **scales** on the rear of the head of a King Cobra, distinguishing it from other cobras.
• **PREHENSILE TAIL**
Tail that can grip, characteristic of **arboreal** animals.
• **PROBOSCIS**
Long snout or mouthparts.
• **RATTLE**
Loosely interlocking remnants of shed skin, present on a rattlesnake's tail, that are vibrated to make a rattling sound to deter predators.
• **REAR-FANGED SNAKE**
Venomous **snake** that has **fangs** at the rear of the upper jaw.
• **REPTILE**
Cold-blooded vertebrate characterized by the presence of lungs, and **scales**, **scutes**, or **bony plates**.
• **RETICULATED**
Arranged in a network pattern.
• **RING**
Narrow marking that completely encircles the body.
• **ROSTRAL SCALE**
Scale at the very tip of the snout on the upper jaw.
• **SADDLE**
Broad marking that passes over an animal's back and extends a short distance down the sides.
• **SALAMANDER**
Typically terrestrial **amphibian** with a long body and tail and short limbs. Some species return to water to breed; others lay eggs on land.
• **SAW-SCALING**
Action of a **snake** curving its body in concentric curves and rasping its **keeled scales** together to make a sawing sound as a warning.
• **SCALE**
Soft, usually overlapping body covering in **snakes**, **lizards**, and **amphisbaenians** (may be smooth, **keeled**, granular, or **tuberculate**).
• **SCUTE**
Large, well-defined **scale**, e.g. on a **tortoise** or **turtle carapace**.
• **SEMIBURROWING**
Pertaining to an animal that lives some of the time below ground or lives in leaf-litter.
• **SHELL**
Protective outer covering of a **turtle** or **tortoise**, comprising a **carapace** and a **plastron**.
• **SNAKE**
Reptile with a long, slender body covered in smooth or keeled **scales**, flexible jaws, forked tongue, no limbs, fixed "spectacles" (**brilles**) rather than movable eyelids, and no external ear. Some are highly venomous, but many are harmless.
• **SPECTACLES**
See **Brilles**.
• **SPERMATOPHORE**
Gelatinous mass of sperm deposited by the male and picked up by the cloacal lips of the female.
• **SPUR**
Pointed, projecting structure on the limbs. *See also* **Cloacal spur**.
• **STRIPE**
Marking that usually runs longitudinally down the body.
• **SUBADULT**
Animal that is older than a **juvenile** but is not yet fully mature.
• **SUBOCULAR SCALE**
Scale that separates the eye from the **labial scales** in some **snake** species.
• **TADPOLE**
The **larva** of a **frog** or **toad**, before undergoing **metamorphosis** into the adult form.
• **TERRAPIN**
Colloquial term often used to describe a freshwater **turtle**.
• **TOAD**
Member of the family Bufonidae. The term is also used more generally to describe any slow-moving **frog** or toad with rough, warty skin.
• **TORTOISE**
Terrestrial **chelonian**.
• **TRUNCATED**
Short and blunt, often of a tail.
• **TUATARA**
Primitive, lizardlike **reptile** found only on islands off New Zealand.
• **TUBERCLE**
Fleshy protuberance.
• **TUBERCULATE**
Covered in raised, fleshy protuberances.
• **TURTLE**
Freshwater or marine **chelonian**.
• **VENTRAL SCALE**
Scale on the underside of a **snake's** body (usually broader than other scales).
• **VERTEBRAL**
Along the center of the back.
• **VESTIGIAL**
Pertaining to part of an animal that is in the process of being lost in the course of evolution and is small, imperfectly formed, and serves little or no function.
• **VOCAL SAC**
Soft, baglike structure that inflates and acts as a resonator, amplifying the mating calls of some male **frogs** and **toads**.
• **WORM-LIZARD**
See **Amphisbaenian**.

INDEX

A

Acanthodactylus erythrurus 88
Acanthophis praelongus 156
Acris crepitans 227
Acrochordus arafurae 124
Acrochordus granulatus 125
activity 24–25
Adder
  Horned 177
  Many-horned 177
  Northern Cross 189
  Northern Death 156
  Peringuey's 179
  Puff 15, 26, 177
Aesculapian Snake 135
African Bullfrog 237
African Clawed Toad 214
African Helmeted Turtle 44
African Rock Python 124
African Treefrog 241
Afrixalus fornasinii 240
Agalychnis callidryas 11, 227
Agama, Common 74
Agama agama 74
agamid lizards 74–77
Agile Frog 238
Agile Lizard *see* Sand Lizard
Agkistrodon bilineatus 175
  A. b. bilineatus 175
  A. b. taylori 175
Agkistrodon blomhoffi 175
Agkistrodon contortrix 176
Agkistrodon piscivorus 176
Ahaetulla nasuta 125
Aipysurus laevis 156
Ajolate 103
alligator lizards 94
Alligator mississippiensis 190
Alligator sinensis 191
Alligator Snapping Turtle 50
alligators 13, 190–92
Allison's Anole 66
Alpine Newt 11, 203
Alytes muletensis 212
Alytes obstetricans 212
Amazonian Bushmaster 187
Amazonian Horned Frog 220
Amazonian Tree Boa 113
Amblyrhynchus cristatus 65
Ambystoma macrodactylum 205
Ambystoma maculatum 205
Ambystoma mexicanum 206
Ambystoma tigrinum 205
Ameiva, Common 90
Ameiva ameiva 90
American Alligator 7, 13, 190
American Chameleon *see* American Green Anole
American Green Anole 66
American Milksnake 142
American Toad 222
Amethystine Python 120
amphibians 6–7
Amphisbaena alba 101
Amphisbaena fuliginosa 102
amphisbaenians 15, 101–3
amphiumas 199
Amphiuma tridactylum 199
anacondas 22, 115–16
anatomy 10–15
Angolan Coralsnake 157
Anguis fragilis 94
Anilius scytale 107
Anniella geroninensis 95
anoles 66
Anolis allisoni 66
Anolis carolinensis 66
Anolis equestris 66
Antaresia childreni 117
Apodora papuana 117
Arafura Filesnake 124
Argentinian Boa 109
Armadillo Girdled Lizard 27, 87
armour 26
Ascaphus truei 211
Asian Horned Frog 214
Asian Leaf Frog 26
Asian Leaf Turtle 52
Asian Sunbeam Snake 106
Aspidelaps lubricus 157
  A. l. cowlesi 157
  A. l. infuscatus 157
  A. l. lubricus 157
Aspidelaps scutatus 157
Aspidites melanocephalus 118
Atelopus zetecki 222
Atlantic Coastal Bushmaster 187
Atractaspis bibroni 155
Australian Frilled Lizard 75
Australian Taipan 170
Austrelaps superbus 158
autohaemorrhagy 27
Axolotl 206
Azemiops feae 176

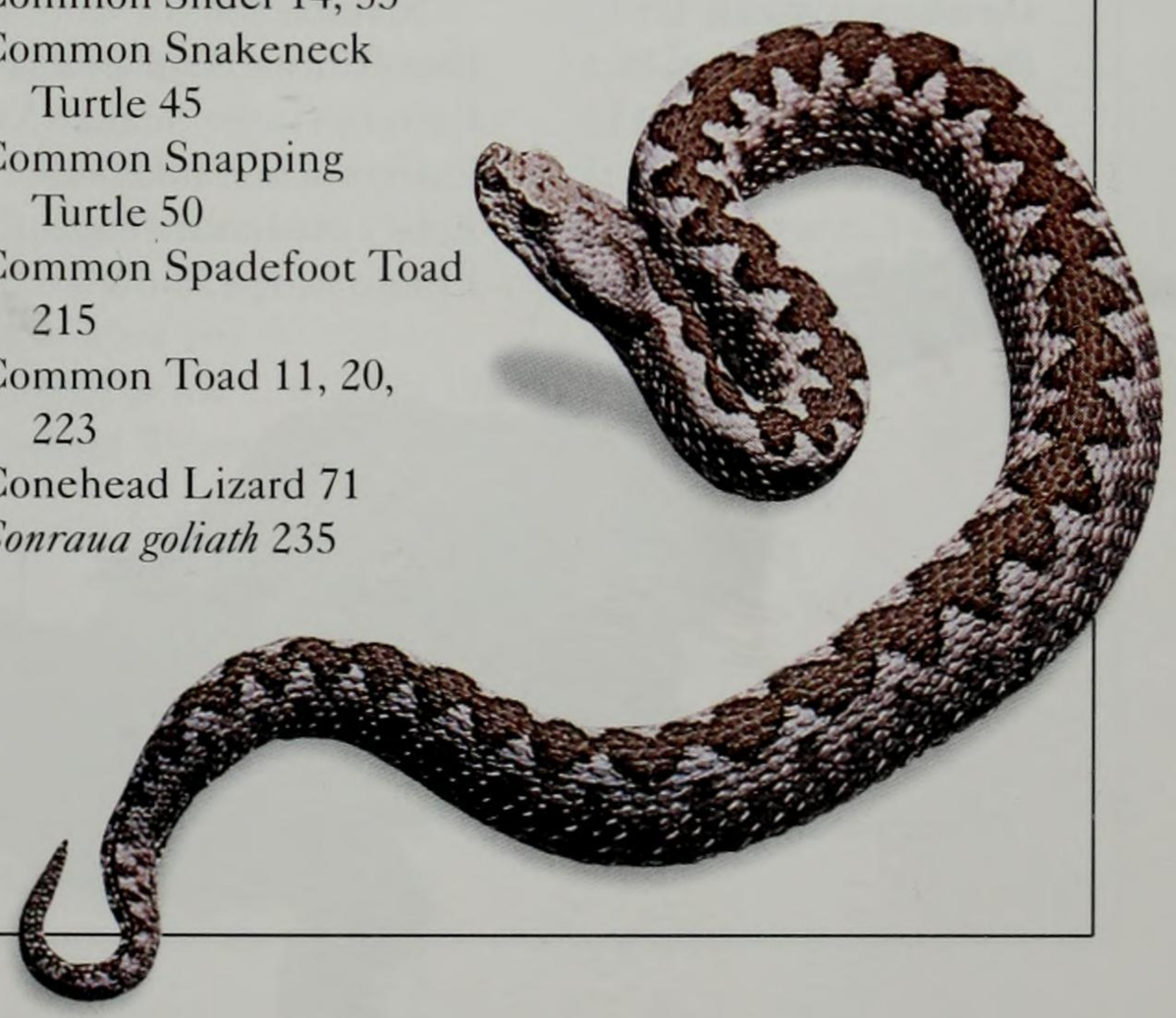
B

Bachia 90
Bachia flavescens 90
Baja California Legless Lizard 95
Balearic Wall Lizard 90
Ball Python *see* Royal Python
Banded Gila Monster 97
Banded Krait 159
Banded Rubber Frog 245
Banded Water Cobra 158
Banded Watersnake 148
Bar-lipped Sheen Skink 82
Barred Grass Snake 148
Basilicus plumifrons 67
Basilisk, Plumed 67
Batrachoceps attenuatus 206
Beaded Lizard 96
Beauty Ratsnake 136
Bell's Mastigure 77
Bibron's Burrowing Asp 155
Big-headed Turtle 51
Bipes biporus 103
Bismarck Ringed Python 118
Bitis arietans 177
Bitis caudalis 177
Bitis cornuta 177
Bitis gabonica 178
Bitis nasicornis 179
Bitis peringueyi 179
Black Caiman 23, 192
Black Corn 133
Black Mamba 160
Black Spinytail Iguana 68
Black Tigersnake 168
Black-and-green Poison-dart Frog 232
Black-and-white Worm-lizard 102
Black-headed Python 118
Blacksnake, Red-bellied 172
Blanus cinereus 102
blind lizards 87
Blindsnake
  Beaked, Schlegel's 104
  Brahminy 104
  Lesser, Ternetz's 105
  Texas 105
blindsnakes 22, 104
Blood Python 122
Bloodsucker *see* Common Garden Lizard
Blue Poison-dart Frog 233
Blunt-headed Treesnake 139
Boa
  Constrictor, Common 109
  Ground 110
  Jamaican 114
  Keel-scaled, Round Island 31, 108
  Pacific 111
  Rainbow 19, 113
  Rosy 116
  Rubber 112
  Sand 114
  Tree, Amazonian 113
  Tree, Emerald 112
  Tree, Madagascan 110
  Tree, Pacific 111
Boa constrictor 109
  B. c. imperator 109
  B. c. occidentalis 109
Boa dumerili 110
Boa manditra 110
boas 19, 23, 27, 109–16
Boelen's Python 121
Bogertophis subocularis 126
Boiga cyanea 126
Boiga dendrophila 127
Boiga irregularis 127
Bolyeria multicarinata 108
Bombina orientalis 213
Bombina variegata 213
Boomslang 26, 131
Borneo Earless Monitor 95
Borneo Short-tailed Python 122
Bothriechis schlegelii 180
Bothrochilus boa 118
Bothrops asper 180
Bothrops atrox 181
Bothrops insularis 181
Bothrops jararaca 181
Boulengerina annulata 158
Boulenger's Asian Tree Toad 226

box turtles 26, 51
Brachylophus fasciatus 67
Brahminy Blindsnake 104
Breviceps adspersus 243
Brown Vinesnake 149
Brown Water Python 22, 119
Brown-striped Frog 217
Brownsnake
  Eastern (Common) 173
  King 172
Bufo americanus 222
Bufo boreas 222
Bufo bufo 11, 16 17, 223
Bufo calamita 223
Bufo marinus 224
Bufo punctatus 224
Bufo viridis 225
Bullfrog
  African 237
  North American 237
  South American 221
Bullsnake 26
Bungarus caeruleus 159
Bungarus fasciatus 159
Burmese Rock Python 19, 122
burrowing asps 155
Burrowing Boa, Round Island 108
Burrowing Cobra 171
Burton's Snake-lizard 64
Bushmaster 187
Bushveld Rain Frog 243

C

caecilians 11, 209–10
Caiman crocodilus 192
caimans 23, 192
Calabar Ground Python 27, 118
Calabaria reinhardti 118
California Newt 203
California Slender Salamander 206
Californian Kingsnake 140
Calloselasma rhodostoma 182
Calotes versicolor 74
Calumna parsonii 78
Cameroon Dwarf Chameleon 80
Candoia aspera 110
Candoia carinata 111
  C. c. carinata 111
  C. c. paulsoni 111
Cane Toad *see* Marine Toad
Cantil 175
Cape Filesnake 147
Cape Ghost Frog 218
Capensibufo tradouwi 225
Carettochelys insculpta 47
Carpet Python 120
Casarea dussumieri 108
Catsnake
  Brown 127
  Green 126
Cayenne Caecilian 210
Central American River Turtle 47
Central Bearded Dragon 77
Central Plains Milksnake 143
Centrolenella valerioi 232
Cerastes cerastes 182
Ceratobatracus guentheri 234
Ceratophrys cornuta 220
Ceylon Caecilian 209
Chain Kingsnake *see* Eastern Kingsnake
Chalcides ocellatus 81
Chamaeleo calyptratus 79
Chamaeleo jacksonii 78
Chameleon
  Dwarf, Cameroon 80
  Oustalet's 80
  Panther 19, 80
  Parson's 78
  Three-horned, Jackson's 78
  Veiled, Yemeni 79
chameleons 26, 78–80
Charina bottae 112
Central Bearded Dragon 77
Chelodina longicollis 45
Chelonia mydas 49
Chelus fimbriatus 45
Chelydra serpentina 50
Chequerboard Worm-lizard 103
Children's Python 117
Chinese Alligator 191
Chinese Crocodile Lizard 95
Chinese Softshell Turtle 48
Chioglossa lusitanica 199
Chiromantis xerampelina 242
Chlamydosaurus kingii 75
Chrysopelea paradisi 128
Chuckwalla 30, 72
clawed toads 214
Clelia clelia 128
Clemmys insculpta 51
Cnemidophorus gramivagus 91
Cnemidophorus uniparens 91
Coachwhip 146
Coastal Taipan 170
Cobra
  Burrowing 171
  Cape 167
  Egyptian 165
  King 22, 169
  Monoculate, Thai 166
  Spectacled, Indian 166
  Spitting 27, 167–68
  Tree, Gold's 173
  Water, Banded 158
Coleodactylus septentrionalis 58
Coleonyx variegatus 59
Collared Lizard 68
Colombian Boa 109
colour as defence 26
Coluber viridiflavus 129
colubrids 125–55
Common Ameiva 90
Common Beaked Sea Snake 161
Common Boa Constrictor 109
Common Box Turtle 52
Common Fringe-toed Lizard 88
Common Frog, European 239
Common Garden Lizard 74
Common House Gecko 60
Common Krait 159
Common Lancehead 181
Common Leaf-tailed Gecko 25, 64
Common Rhombic Egg-eater 130
Common Slider 14, 53
Common Snakeneck Turtle 45
Common Snapping Turtle 50
Common Spadefoot Toad 215
Common Toad 11, 20, 223
Conehead Lizard 71
Conraua goliath 235
conservation 30–31
Copperhead 176
  Australian Lowlands 158
Corallus caninus 112
Corallus hortulanus 113
Coralsnake
  Allen's 163
  Eastern 164
  Sonoran 22
  South African 157
  South American 164
  Western 163
Cordylus cataphractus 87
Cornsnake 132
Coronella austriaca 129
Corucia zebrata 81
Corytophanes cristatus 68
Costa Rican Golden Toad 30
Cottonmouth 176
Couch's Spadefoot 215
Cowl Snake *see* False Smooth Snake
Crab-eating Water Snake 137
Cribo *see* Indigo Snake
Crinia insignifera 216
Crocodile
  Cuban 194
  Dwarf 31, 195
  Indo-Pacific 194
  Nile 13, 193
Crocodile Newt *see* Mandarin Salamander
Crocodile Tegu 91
crocodiles 13, 193–95
crocodilians 6, 13, 190–95
Crocodilurus lacertinus 91
Crocodylus acutus 190
Crocodylus niloticus 193
Crocodylus porosus 194
Crocodylus rhombifer 194
Crotalus adamanteus 183



Crotalus atrox 183
Crotalus cerastes 183
Crotalus durissus 184
Crotalus d. unicolor 184
C. d. vegrandis 184
Crotalus horridus 185
Crotalus viridis 185
C. v. viridis 185
Crotaphytus collaris 68
Cryptobranchus alleganiensis 197
Ctenosaura similis 68
Cuban Crocodile 194
Cuban Dwarf Boa 108
Cuora flavomarginata 51
Cuvier's Dwarf Caiman 192
Cuvier's Madagascan Tree Swift 71
Cyclemis dentata 52
Cyclura cornuta 69
Cylindrophis ruffus 107
Cynops pyrrhogaster 200
Cyrtodactylus louisiadensis 59

D

Dab Lizard *see* Bell's Mastigure
Daboia russelii 186
D'Albertis Python *see* White-lipped Python
Dasia smaragdina 81
Dasypeltis scabra 130
defence 26–27
Delma fraseri 64
Dendroaspis angusticeps 160
Dendroaspis polylepis 160
Dendrobates auratus 232
Dendrobates azureus 233
Dendrobates pumilio 233
Dendrobates tinctorius 234
dendrobatid frogs 232–34
Dermatemys mawii 47
Dermochelys coriacea 48
Dermophis mexicanus 11, 210
Desert Black Snake 174
Desert Cobra *see* Desert Black Snake
Desert Grassland Whiptail 91
Desert Horned Lizard 71
Desert Iguana 69
Desert Kingsnake 141
Desmognathus ochrophaeus 207
Dharman Ratsnake 151
Diamond Python 120
Diamondback Rattlesnake 183
Dibamus nicobaricus 87
Dicamptodon tenebrosus 198
Dipsas indica 130
Dipsosaurus dorsalis 69
Dispholidus typus 131
distribution 28
Dracaena guianensis 92
Draco volans 75
Drymarchon corais 131
Dryophis nasutus see *Ahaetulla nasuta*
Dumeril's Ground Boa 110
Dumeril's Monitor Lizard 99
dwarf boas 108
Dwarf Caiman, Cuvier's 192
Dwarf Crocodile 31, 195
Dyeing Poison-dart Frog 234
Dyscophus antongilli 244

E

East African Carpet Viper 186
East African Gaboon Viper 178
East African Green Mamba 160
East African Sand Boa 114
Eastern Garter Snake 153
Eastern Kingsnake 140
Echis pyramidum 186
Edible Frog 238
Egernia frerei 82
Egernia major 82
Egg-eater 22, 130
Egyptian Cobra 165
Elaphe guttata 132
E. g. guttata 132
Elaphe longissima 135
Elaphe mandarina 135
Elaphe obsoleta 134
E. o. rossalleni 134
E. o. spiloides 134
Elaphe taeniura 136
E. t. friesi 136
E. t. ridleyi 136
elapids 156–74
Elegant Helmeted Lizard 68
Eleutherodactylus planirostris 220
Elgaria kingii 94
Emerald Tree Boa 112
Emerald Tree Monitor Lizard 100
Emerald Tree Skink 27, 81
Emoia caeruleocauda 82
Emydura subglobosa 46
Emys orbicularis 52
Enhydrina schistosa 161
Epicrates cenchria 113
Epicrates subflavus 114
Eretmochelys imbricata 49
Erpeton tenticulatum 136
Eublepharis macularius 59
Eugongylus rufescens 82
Eumeces schneideri 83
Eunectes murinus 115
Eunectes notaeus 116
European Eyed Lizard 25, 89
European Pond Turtle 52
European Treefrog 228
European Whipsnake 129
Eyelash Pitviper 180

F

False Coralsnake 128
False Gharial 195
False Lancehead 155
False Smooth Snake 146
False Water Cobra 138
Fea's Viper 176
feeding 19–23
Fernando Po Fire Skink 84
Fijian Banded Iguana 67
Filesnake
Arafura 124
Cape 147
Little 125
filesnakes 124–25
Fire Salamander 11, 202
fire-bellied toads 213
Florida Blue-striped Garter Snake 153
Florida Kingsnake 141
Florida Worm-lizard 102
Flying Dragon, Common 75
Flying Snake, Paradise 128
Foam-nest Frog 18, 242
Fordonia leucobalia 137
Fraser's Scalyfoot 64
Frog
Agile 238
Brown-striped 217
Burrowing, Mexican 243
Burrowing, Painted 217
Common, European 239
Cricket, Northern 227
Edible 238
Flying, Javan 243
Foam-nest 18, 242
Ghost, Cape 218
Glass, La Palma 232
Goliath 235
Greenhouse 220
Hairy 242
Horned, Amazonian 220
Horned, Asian 214
Horned, Solomon Island 234
Lake 238
Leaf 26, 231
Leaf-folding, Greater 240
Lemur 30
Leopard, Southern 24, 239
Marsupial, Mountain 228
Paradoxical 226
Parsley 216
Poison-dart 232–34
Pool 238
Rain, Bushveld 243
Reed, Tinker 241
River, White-lipped 235
Rubber, Banded 245
Seychelles 218
Shovel-nosed, Mottled 240
Tailed 211
Tomato 244
Túngara 219



Froglet, Sign-bearing 216
frogs 11, 18, 24, 211
Furcifer oustaleti 80
Furcifer pardalis 80

G

Gaboon Viper 178
Galapagos Tortoise 54
Gallotia galloti 88
Ganges Gharial 193
Garter Snake 15, 153
Gastrophryne olivacea 244
Gastrotheca monticola 228
Gavial *see* Ganges Gharial
Gavialis gangeticus 193
Gecko
  Banded, Western 59
  Day, Standing's 62
  Fat-tailed, West-African 61
  Flying, Kuhl's 62
  Giant Forest, New Caledonian 62
  House, Common 60
  Leaf-litter 58
  Leaf-tailed, Common 25, 64
  Leopard 14, 59
  Louisiades Bow-fingered 59
  Moorish 22, 63
  Palm 60
  Pelagic 61
  Tokay 60
  Turnip-tailed 63
  Web-footed 28, 61
  Wonder 63
geckos 58–64
Gekko gecko 60
Gekko vittatus 60
Geochelone carbonaria 53
Geochelone elegans 53
Geochelone nigra 54
Geochelone pardalis 54
Gerrhosaurus major 87
gharials 13, 193
ghost frogs 218
Giant Plated Lizard 87
giant salamanders 197
Giant Treefrog 230
Gila Monster 97
girdled lizards 87
glass frogs 232
glass lizards 94
Golden Lancehead 181
Golden Mantella 235
Gold's Tree Cobra 173
Goliath Frog 235
Gongylophis colubrinus 114
Gongylophis conicus 114
Gonyosoma oxycephala 137
Gopher Snake *see* Pine Snake
Grass Snake 27, 148
Gray's Waterskink 86
Great Crested Newt 18, 30
Great Plains Narrow-mouthed Toad *see* Western Narrow-mouthed Toad
Greater Leaf-folding Frog 240
Greater Siren 196
Green Anaconda 115
Green Iguana 70
Green Mantella 236
Green Sea Turtle 31, 49
Green Snake, Rough 149
Green Toad 20, 225
Green Tree Python 121
Green Treefrog 229
Green Water Dragon 76
Green-blooded Skink 84
Greenhouse Frog 220
Grey Treefrog 229
Guianan Caiman Lizard 92
Guianan Lava Lizard 72
Gulf Coast Box Turtle 52
Gymnophthalmus underwoodi 92

H

habitat 28–29
Hairy Frog 242
handling 33
Harlequin Toad 222
Hawksbill Sea Turtle 22, 29, 49
Heleophryne purcelli 218
Hellbender 197
heloderm lizards 27, 96–97
Heloderma horridum 96
Heloderma suspectum 97
  H. s. cinctum 97
Hemachatus haemachatus 161
Hemidactylus frenatus 60
Hemisus marmoratus 240
Hemitheconyx caudicinctus 61
Hermann's Tortoise 56
Heterodon nasicus 138
Hingeback Tortoise 21
Hognose Snake 19, 27
  Giant Malagasy 145
  Western 138
Hog's Island Boa 109
Honduran Milksnake 142
Hong Kong Warty Newt 201
Hooded Snake *see* False Smooth Snake
Hoplocercus spinosus 70
Horned Adder 177
Horned Toad 20
Horned Toad Lizard 27
Housesnake, Common 139
Hydrodynastes gigas 138
Hydrosaurus pustulatus 75
Hyla arborea 228
Hyla cinerea 229
Hyla chrysoscelis 229
Hylarana albolabris 235
hylid treefrogs 227–31
Hyperolius tuberilinguis 241
Hypsilurus spinipes 76

I

Iberian Worm-lizard 102
Ichthyophis glutinosus 209
Iguana
  Banded, Fijian 67
  Black Spinytail 68
  Desert 69
  Green 70
  Marine, Galapagos 21, 65
  Rhinoceros 21, 69
Iguana iguana 70
  I. i. iguana 70
  I. i. rhinolopha 70
iguanas 21, 65–73
Ilha de Maraca Leaf-litter Gecko 58
Imantodes cenchoa 139
Indian Rock Python 122
Indian Spectacled Cobra 167
Indian Star Tortoise 53
Indigo Snake 131
Indo-Chinese Spitting Cobra 167
Indo-Pacific Crocodile 194
Inland Taipan 170

J

Jackson's Three-horned Chameleon 78
Jacobson's organ 13
Jamaican Boa 114
Japanese Fire-bellied Newt 26, 200
Jararaca 181
Javan Flying Frog 243
Jordan's Salamander 208
Jungle Carpet Python 120

K

Kaloula pulchra 245
Keelback, Common 174
keeping animals 33
King Brownsnake 172
King Cobra 22, 169
Kingsnake
  Common 140
  Scarlet 143
Kinixys erosa 55
Kinosternon flavescens 46
Kinosternon oderatum 46
Knight Anole 66
Komodo Dragon 7, 22, 98
Krait 159
Kuhl's Flying Gecko 62

L

La Palma Glass Frog 232
Lace Monitor Lizard 100
Lacerta agilis 89
Lacerta lepida 89
Lachesis muta 187
  L. m. muta 187
  L. m. rhombeata 187
Laemanctus longipes 71
Lake Frog 238
Lampropeltis getula 140
  L. g. californiae 140
  L. g. floridana 140
  L. g. getula 140
  L. g. nigritis 140
  L. g. splendida 140
Lampropeltis triangulum 142
  L. t. annulata 142
  L. t. elapsoides 142
  L. t. gentilis 142
  L. t. hondurensis 142
  L. t. sinaloae 142
Lamprophis fuliginosus 139
Lancehead
  Common 181
  Golden 181
Land Mullet 82
land tortoises 53–56
Langaha madagascariensis 144
Lanthanotus borneensis 95

Lapemis curtus 162
Lataste's Viper 189
Laticauda colubrina 162
Leatherback Sea Turtle 22, 48
Leioheterodon madagascariensis 145
Leiopython albertisii 119
Lemur Frog 30
Leopard Gecko 14, 59
Leopard Tortoise 54
Lepidophyma flavimaculatum 65
leptodactylids 219–21
Leptodactylus pentadactylus 221
Leptopelis modestus 241
Leptophis diplotropis 145
Leptotyphlops dulcis 105
Lialis burtonis 64
Liasis fuscus 119
Lichanura trivirgata 116
Limnodynastes peronii 217
Liotyphlops ternetzii 105
Little Filesnake 125
Litoria caerulea 230
Litoria infrafrenata 230
Lizard
  Alligator, Sonoran 94
  Armadillo Girdled 27, 87
  Beaded 96
  Blind, Nicobar 87
  Caiman, Guianan 92
  Collared 68
  Conehead 71
  Crocodile, Chinese 95
  Elegant Helmeted 68
  Eyed, European 25, 89
  Fence, Western 72
  Frilled, Australian 75
  Fringe-toed, Common 88
  Garden, Common 74
  Giant Plated 87
  Lava, Guianan 72
  Legless, Baja California 95
  Horned, Desert 71
  Horned Toad 27
  Luminous 93
  Monitor 22, 98–100
  Mop-headed 73
  Night, Yellow-spotted 65
  Prickle-tail 70
  Sailfin, Philippine 75
  Sand 89
  Swollen-nosed Side-blotched 73
  Wall, Balearic 90
lizards 14, 22, 58–100
Llanos Whiptail 91
Long-nosed Snake 151
Long-nosed Whipsnake 125
Long-toed Salamander 205
Louisiades Bow-fingered Gecko 59
Loxocemus bicolor 106
Luminous Lizard 93
lungless salamanders 196, 206–8
Luth *see* Leatherback Sea Turtle
Lyre Snake 154

M

Mabuya striata 83
Macroclemys temminckii 50
Macroprotodon cucullatus 146
Madagascan Leafnose Vinesnake 26, 144
Madagascan Ploughshare Tortoise 19
Madagascan Tree Boa 110
Mainland Tigersnake 168
Major Skink 82
Majorcan Midwife Toad 212
Malacochersus tornieri 55
Malaysian Cave Racer 136
Malaysian Narrow-mouthed Toad 245
Malpolon monspessulanus 146
mambas 160
Mamushi 175
Mandarin Ratsnake 135
Mandarin Salamander 20, 204
Mangrove Snake 127
mantella frogs 235
Mantella auriantiaca 236
Mantella viridis 236
Many-horned Adder 177
Marbled Newt 203
Marine Iguana, Galapagos 65
Marine Toad 20, 224
Marsh Frog *see* Lake Frog
Marsh Terrapin *see* African Helmeted Turtle
Marsupial Frog 18, 228
Massasauga 187
Masticophis flagellum 146
Matamata 22, 45
Megophrys nasuta 214
Mehelya capensis 147
Melanoceps occidentalis 83
Mexican Black Kingsnake 141
Mexican Burrowing Frog 243
Mexican Burrowing Python *see* Neotropical Sunbeam Snake
Mexican Caecilian 11, 210
Mexican Cantil 175
Mexican Milksnake 143
Micropechis ikaheka 162
Micruroides euryxanthus 163
Micrurus alleni 163
Micrurus fulvius 164
Micrurus lemniscatus 164
Midwife Toad 212
Milksnake, American 142
Mitre Sandfish 85
Mole Lizard *see* Ajolote
mole salamanders 205–6
Mole Snake 150
Moloch horridus 76
Monitor, Borneo Earless 95
monitor lizards 98–100
Monkey-tailed Skink 21, 81
Montpellier Snake 146
Moorish Gecko 22, 63
Mop-headed Lizard 73
Morelia amethistina 120
Morelia boeleni 121
Morelia spilota 120
  M. s. cheyni 120
  M. s. spilota 120
Morelia viridis 121
Mottled Shovel-nosed Frog 240
Mountain Dusky Salamander 207
Mountain Marsupial Frog 228
movement 24–25
mud turtles 46
Mudpuppy 197
Müller's Skink 85
Musk Turtle, Common 46
musk turtles 46
Mussurana 128
myobatrachid frogs 216–17

N

Nactus pelagicus 61
Naja haje 165
  N. h. haje 165
Naja kaouthia 166
Naja naja 166
Naja nivea 167
Naja pallida 167
Naja siamensis 168
Naked-neck Crocodile *see* Crocodile, Indo-Pacific
Namib Desert Sidewinding Viper *see* Peringuey's Adder
Namib Web-footed Gecko 61
Namibian Coralsnake 157
narrow-mouthed toads 20, 244–45
Natrix maura 147
Natrix natrix 148
  N. n. helvetica 148
Natterjack Toad 29, 223
Necturus maculosus 197
Neobatrachus pictus 217
Neotropical Sunbeam Snake 106
Nerodia fasciata 148
New Caledonian Giant Forest Gecko 62
New Guinea Blue-tongued Skink 85
New Guinea Ground Boa 110
New Guinea Taipan 170
Newt
  Alpine 11, 203
  California 203
  Fire-bellied 24, 26, 200
  Great Crested 18, 30
  Marbled 203
  Sharp-ribbed 201



Smooth 204
Tsitou 200
Warty, Hong Kong 201
newts 11, 18, 27, 196
Nicobar Blind Lizard 87
night lizards 65
Nile Crocodile 13, 193
Nile Monitor Lizard 100
North American Bullfrog 237
Northern Black Tegu 93
Northern Brown Python *see* Children's Python
Northern Cricket Frog 227
Northern Cross Adder 189
Northern Death Adder 156
Northern Pine Snake 149
Nose-horned Viper 29, 189
Notechis ater 168
Notechis scutatus 168

O

Ocellated Skink 81
Olm 198
Ololygon rubra 231
Opheodrys aestivus 149
Ophiophagus hannah 169
Ophisaurus apodus 94
Oplurus cuvieri 71
Orange-sided Leaf Frog 231
Orange-tailed Skink *see* Schneider's Gold Skink
Oriental Fire-bellied Toad 213
Ornamental Horned Toad 20
Ornate Cantil 175
Osteolaemus tetraspis 195
Oustalet's Chameleon 80
Oxybelis aeneus 149
Oxyuranus microlepidotus 170
Oxyuranus scutellatus 170
O. s. canni 170
O. s. scutellatus 170

P

Pachytriton brevipes 200
Pacific Blue-tailed Skink 82
Pacific Boa 111
Pacific Salamander 198
Painted Burrowing Frog 217
Paleosuchus palpebrosus 192
Palm Gecko 60
Palmatogekko rangei 61
Panaspis reichenowi 84
Pancake Tortoise 55
Panther Chameleon 19, 80
Papuan Olive Python 117
Paradoxical Frog 226
Paraguayan Anaconda *see* Anaconda, Yellow
Paramesotriton hongkongensis 201
Paranaja multifasciata 171
Parrot Snake, Pacific Coast 145
Parsley Frog 216
Parson's Chameleon 78
Pedostibes hosii 226
Pelagic Gecko 61
Pelagic Sea Snake 171
Pelamis platurus 171
Pelobates fuscus 215
Pelodiscus sinensis 48
Pelodytes punctatus 216
Pelomedusa subrufa 44
Pelomedusid side-necked turtles 44–45
Peringuey's Adder 179
Phelsuma standingi 62
Philippine Sailfin Lizard 75
Phrynomantis bifasciatus 245
Phrynosoma platyrhinos 71
Phyllomedusa hypochondrialis 231
Physalaemus pustulosus 219
Physignathus cocincinus 76
Piebald Chuckwalla 30, 72
Pig-snouted River Turtle 47
Pine Snake 149
pipa toads 214
pipesnakes 107
Pituophis melanoleucus 149
P. m. melanoleucus 149
Pitviper 23
Eyelash 180
Malayan 182
Temple, Wagler's 188
White-lipped 188
Platanna *see* African Clawed Toad
plated lizards 87
Platysternon megacephalum 51
Plethodon cinereus 207
Plethodon jordani 208
Pleurodeles waltl 201
Plumed Basilisk 67
Podarcis lilfordi 90
Podocnemis unifilis 45
Pogona vitticeps 77
poison-dart frogs 6, 18, 232–34
Pool Frog 238
population decline 30
Prairie Rattlesnake 185
Prasinohaema semoni 84
Prickle-tail Lizard 70
Proctoporus shrevei 93
Proteus anguinis 198
Psammophis subtaeniatus 150
Pseudaspis cana 150
Pseudechis australis 172
Pseudechis porphyriacus 172
Pseudis paradoxa 226
Pseudoboa species 128
Pseudohaje goldii 173
Pseudonaja textilis 173
Pseudotriton ruber 208
Pseudotyphlops philippinus 107
Ptyas mucosus 151
Ptychozoon kuhli 62
Puff Adder 15, 26, 177
Python
Amethystine 120
Black-headed 118
Blood 122
Boelen's 121
Carpet 120
Children's 117
Ground, Calabar 27, 118
Olive, Papuan 117
Reticulated 123
Ringed, Bismarck 118
Rock, African 124
Rock, Burmese 19, 122
Rock, Indian 122
Royal 123
Short-tailed 122
Tree, Green 121
Water, Brown 22, 119
White-lipped 119
Python curtus 122
P. c. breitensteini 122
P. c. brongersmai 122
P. c. curtus 122
Python molurus bivittatus 122
P. m. molurus 122
Python regius 123
Python reticulatus 123
Python sebae 124
P. s. natalensis 124
pythons 19, 23, 117–24
Pyxicephalus adspersus 237

R

Racer
Cave, Malaysian 136
Red-tailed 137
rain frogs 243
Rainbow Agama *see* Agama, Common
Rainbow Boa 19, 113
Ramphotyphlops braminus 104
Rana catesbeiana 237
Rana dalmatina 238
Rana esculenta 238
Rana lessonae 238
Rana ridibunda 238
Rana temporaria 239
Rana utricularia 239
ranid frogs 234–40
Ratsnake
Beauty 136
Common 134
Dharman 151
Grey 134
Mandarin 135
Orange (Everglades) 134
Tiger 152
Trans-Pecos 126
Rattlesnake
Aruba Island 184
Diamondback 183
Neotropical 184
Prairie 185
Timber 185
Uracoan 184
Western 185
rattlesnakes 23, 27, 183
Red Salamander 208
Red Spitting Cobra 167
Red Worm-lizard 101
Red-backed Salamander 207
Red-bellied Shortneck Turtle 46
Red-eared Slider 53
Red-eyed Treefrog 11, 227
Red-foot Tortoise 14, 53
Red-sided Garter Snake 153
Red-snouted Treefrog 231
Red-spotted Toad 224
Red-tailed Pipesnake 107
Red-tailed Racer 137
Reeve's Turtle 26
Reichenow's Snake-eyed Skink 84

reproduction 7, 16–19
reptiles 6–7
Reticulated Python 123
Rhacodactylus leachianus 62
rhacophorid treefrogs 242–43
Rhacophorus reinwardti 243
Rhampholeon spectrum 80
Rhineura floridana 102
Rhinoceros Iguana 21, 69
Rhinoceros Viper 179
Rhinocheilus lecontei 151
Rhinophrynus dorsalis 243
Rhinotyphlops schlegeli 104
Ribbon Snake, Western 152
Rinkhals 27, 161
Riopa fernandi 84
River Jack *see* Rhinoceros Viper
Rosy Boa 116
Rough Green Snake 149
Rough-scaled Sand Boa 114
Rough-scaled Snake 174
Round Island Keel-scaled Boa 31, 108
Royal Python 123
Rubber Boa 112
Russell's Viper 26, 186

S

Sahara Horned Viper 182
Salamander
  Dusky, Mountain 207
  Fire 11, 202
  Golden-striped 199
  Jordan's 208
  Long-toed 205
  Mandarin 20, 204
  Pacific 198
  Red 208
  Red-backed 207
  Slender, California 206
  Spotted 205
  Tiger 7, 18, 205
salamanders 11, 18, 199–204
Salamandra salamandra 11, 202
Saltwater Crocodile *see* Crocodile, Indo-Pacific
San Francisco Garter Snake 153
sand boas 26, 114
Sand Lizard 89
Sandfish, Mitre 85
Sandsnake, Stripe-bellied 150
Sanzinia madagascariensis see *Boa manditra*
Sauromalus varius 72
Savanna Twigsnake 154
Scaphiopus couchii 215
Scarlet Kingsnake 143
Sceloporus occidentalis 72
Scheltopusik 94
Schlegel's Beaked Blindsnake 104
Schneider's Gold Skink 83
Scinax rubra see *Ololygon rubra*
Scincus mitranus 85
Sea Krait, Yellow-lipped 162
Sea Snake
  Beaked, Common 161
  Olive-brown 156
  Pelagic 171
  Short 162
sea turtles 22, 29, 30, 48–49
Serrated Hinge-back Tortoise 55
Seychelles Frog 218
Sharp-ribbed Newt 201
Shieldnose Snake 157
Shieldtail Snake, Large 107
Shingleback 86
Shinisaurus crocodilurus 95
Short Sea Snake 162
Short-tailed Python 122
Shrinking Frog *see* Paradoxical Frog
Side-stabbing Snake *see* Bibron's Burrowing Asp
Sidewinder 183
Sign-bearing Froglet 216
Sinaloan Milksnake 142
Siphonops annulatus 210
Siren, Greater 196
Siren lacertina 196
sirens 196
Sistrurus catenatus 187
Skink
  Blue-tailed, Pacific 82
  Blue-tongued, New Guinea 85
  Crocodile, Slender 86
  Fire, Fernando Po 84
  Gold, Schneider's 83
  Green-blooded 84
  Legless, Western 83
  Major 82
  Monkey-tailed 21, 81
  Müller's 85
  Ocellated 81
  Sheen, Bar-lipped 82
  Snake-eyed, Reichenow's 84
  Tree, Emerald 27, 81
Skink Gecko 63
skinks 81–86
Slender Crocodile Skink 86
Slider, Common 14, 53
Slow Worm 94
Slug-eating Snake, Common 130
Small-eyed Snake, New Guinea 162
Smooth Newt 204
Smooth Snake 129
snake-lizards 64
snakes 15, 22–24, 33, 104–89
snapping turtles 50
Snow Corn 133
softshell turtles 48
Solomon Island Horned Frog 234
Sonoran Alligator Lizard 94
Sonoran Coralsnake 22
Sooglossus gardineri 218
South American Bushmaster 187
South American Caecilian 210
South American Pipesnake 107
Southern Anglehead Dragon 76
Southern Leopard Frog 24, 239
spadefoot toads 215
Spectacled Caiman 192
Sphenodon punctatus 57
Sphenomorphus muelleri 85
Spilotes pullatus 152
Spine-bellied Sea Snake *see* Short Sea Snake
Spiny Lizard *see* Bell's Mastigure
spitting cobras 167–68
Spotted Fat-Tailed Gecko *see* Leopard Gecko
Spotted Salamander 205
Spur-thighed Tortoise 55
Standing's Day Gecko 62
Stiletto Snake *see* Bibron's Burrowing Asp
Stinkpot Turtle *see* Musk Turtle, Common
Stonemason Toadlet 217
Strawberry Poison-dart Frog 233
Striped Mabuya 83
studying 32
sunbeam snakes 106
Swamp Rattlesnake 187
Swift 72
Swollen-nosed Side-blotched Lizard 73

T

tadpoles 16, 17
Tailed Frog 211
Taipan 170
Taiwan Beauty Ratsnake 136
Tarentola mauritanica 63
Taricha torosa 203
Tegu 22
  Black, Northern 93
  Crocodile 91
Teiid lizards 90–93
Telescopus semiannulatus 152
Telmatobius culeus 221
Tentacled Snake 136
Teratoscincus scincus 63
Terciopelo 180
Ternetz's Lesser Blindsnake 105
Terrapene carolina 52
  T. c. major 52
Testudines 12, 44
Testudo graeca 55
Testudo hermanni 56
Texas Blindsnake 105
Thai Monoculate Cobra 166
Thamnophis proximus 152
Thamnophis sirtalis 153
  T. s. infernalis 153
  T. s. parietalis 153
  T. s. similis 153
  T. s. sirtalis 153
thanatosis 27
Thecadactylus rapicauda 63
Thelotornis capensis 154
Thorny Devil 14, 76
Three-toed Amphiuma 199
Tiger Ratsnake 152
Tiger Salamander 7, 18, 205
Tigersnake
  Black 168
  Eastern 152
  Mainland 168

Tiliqua gigas 85
Timber Rattlesnake 185
Tinker Reed Frog 241
Titicaca Waterfrog 221
Toad
  American 222
  Clawed, African 214
  Common 11, 20, 223
  Fire-bellied, Oriental 213
  Golden, Costa Rican 30
  Green 20, 225
  Harlequin 222
  Horned 20
  Marine 224
  Midwife 212
  Narrow-mouthed 20, 244
  Natterjack 29, 223
  Red-spotted 224
  Spadefoot 215
  Tree, Boulenger's Asian 226
  Western 222
  Yellow-bellied 213
Toadlet
  Stonemason 217
  Tradouw 225
toads 11, 211
Tokay Gecko 60
Tomato Frog 244
Tomistoma schlegeli 195
Tortoise
  Galapagos 54
  Hermann's 56
  Hinge-back 21, 55
  Indian Star 53
  Leopard 54
  Pancake 55
  Ploughshare, Madagascan 19
  Red-foot 14, 53
  Spur-thighed 55
tortoises 14, 44, 53–56
Trachemys scripta 53
  T. s. elegans 53
Trachydosaurus rugosus 86
Tradouw Toadlet 225
Treefrog
  African 241
  European 228
  Giant 230
  Green 229
  Grey 229
  Red-eyed 11, 227
  Red-snouted 231
  White's 230
Tree Racerunner 73
Treesnake, Blunt-headed 139
Tribolonotus gracilis 86
Trichobatrachus robustus 242
Trimeresurus albolabris 188
Trimorphodon biscutatus 154
Triturus alpestris 11, 203
Triturus marmoratus 203
Triturus vulgaris 204
Trogonophis wiegmanni 103
Tropidechis carinatus 174
Tropidolaemus wagleri 188
Tropidonophis mairii 174
Tropidophis melanurus 108
Tropidophorus grayi 86
Tropidurus hispidus 72
Tropidurus plica 73
true toads 222–26
Tsitou Newt 200
Tuatara 57
tuataras 13, 57
Túngara Frog 219
Tupinambis teguixin 93
Turnip-tailed Gecko 63
Turtle
  Big-headed 51
  Box, Common 52
  Box, Yellow-margined 51
  Helmeted, African 44
  Leaf, Asian 52
  Reeve's 26
  River, Central American 47
  River, Pig-snouted 47
  River, Yellow-spotted 45
  Sea 48–49
  Shortneck, Painted 46
  Snakeneck, Common 45
  Snapping 50
  Softshell, Chinese 48
  Wood 21, 51
turtles 6, 14, 33, 44–53
Twigsnake, Savanna 154
Tylototriton verrucosus 204
Typhlonectes compressicaudus 210

U

Underwood's Spectacled Microteiid 92
Uperoleia lithomoda 217
Uranoscodon superciliosus 73
Uromastyx acanthinurus 77
Uroplatus fimbriatus 64
Uta tumidarostra 73

V

Varanus albigularis 98
Varanus dumerilii 99
Varanus komodoensis 98
Varanus niloticus 100
Varanus prasinus 100
Varanus varius 100
Varied Lizard *see* Common Garden Lizard
venom 15, 23, 27
Vinesnake
  Brown 149
  Leafnose 26, 144
Viper
  Carpet, East African 186
  Fea's 176
  Gaboon 178
  Horned, Sahara 182
  Lataste's 189
  Nose-horned 29, 189
  Rhinoceros 179
  Russell's 26, 186
Vipera ammodytes 189
Vipera berus 189
Vipera latastei 189
Viperine Watersnake 147
vipers 175–89

W

Wagler's Temple Pitviper 188
wall lizards 90
Walterinnesia aegyptia 174
Waterdog *see* Mudpuppy
Waterfrog, Titicaca 221
Water Moccasin *see* Cottonmouth
Watersnake
  Banded 148
  Crab-eating 137
  Viperine 147
West African Fat-tailed Gecko 61
West African Gaboon Viper 178
West Canaries Gallotia 88
Western Banded Gecko 59
Western Fence Lizard 72
Western Legless Skink 83
Western Narrow-mouthed Toad 20, 244
Western Toad 222
Whipsnake, Long-nosed 125
Whiptail 91
White-bellied Mangrove Snake *see* Crab-eating Water Snake
White-lipped Python 119
White-lipped River Frog 235
White-throated Monitor Lizard 98
White's Treefrog 230
Wonder Gecko 63
Wood Turtle 21, 51
woodsnakes 108
Worm-lizard
  Black-and-white 102
  Chequerboard 103
  Florida 102
  Iberian 102
  Red 101
worm-lizards 15, 101–3

X

Xenodon rabdocephalus 155
Xenopeltis unicolor 106
Xenopus laevis 214
xenosaurs 95

Y

Yellow Anaconda 116
Yellow Mud Turtle 46
Yellow-and-black Sea Snake *see* Pelagic Sea Snake
Yellow-bellied Toad 213
Yellow-margined Box Turtle 51
Yellow-spotted Night Lizard 65
Yellow-spotted River Turtle 45
Yemeni Veiled Chameleon 79



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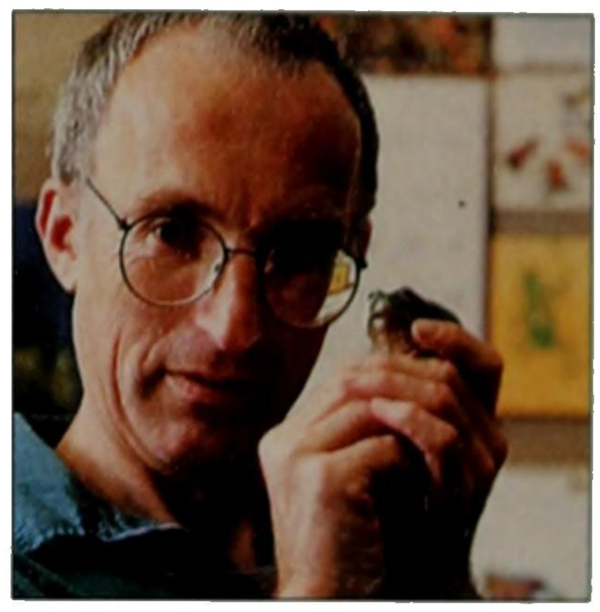








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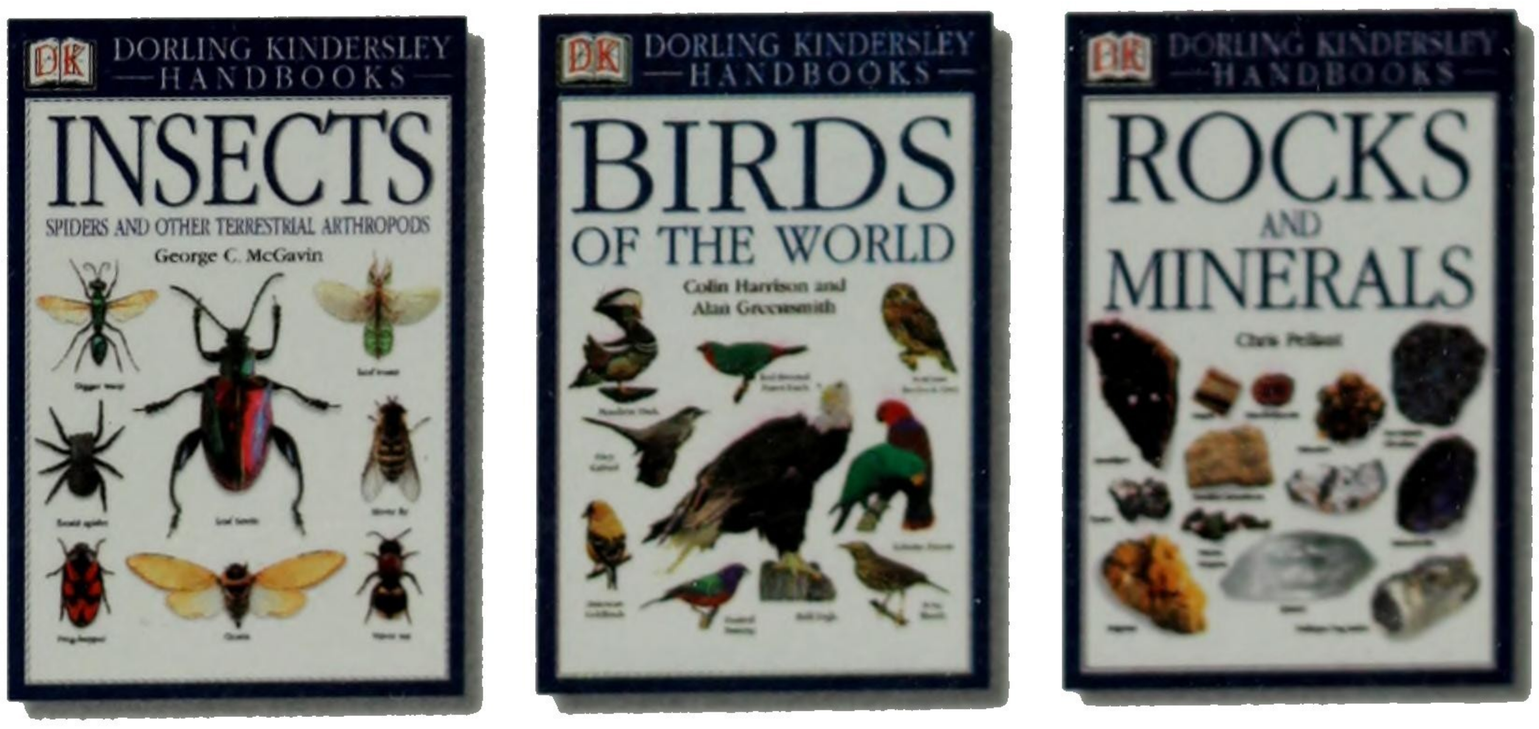


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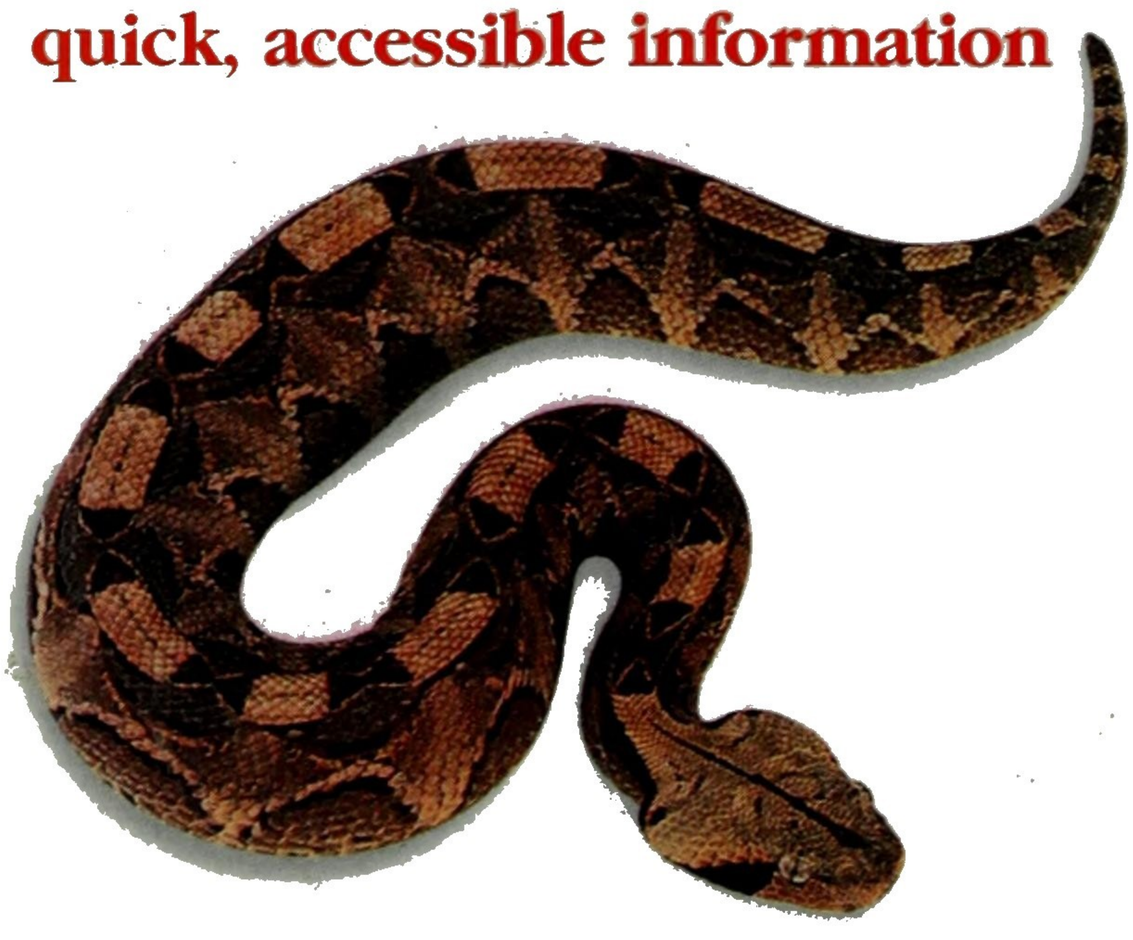
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